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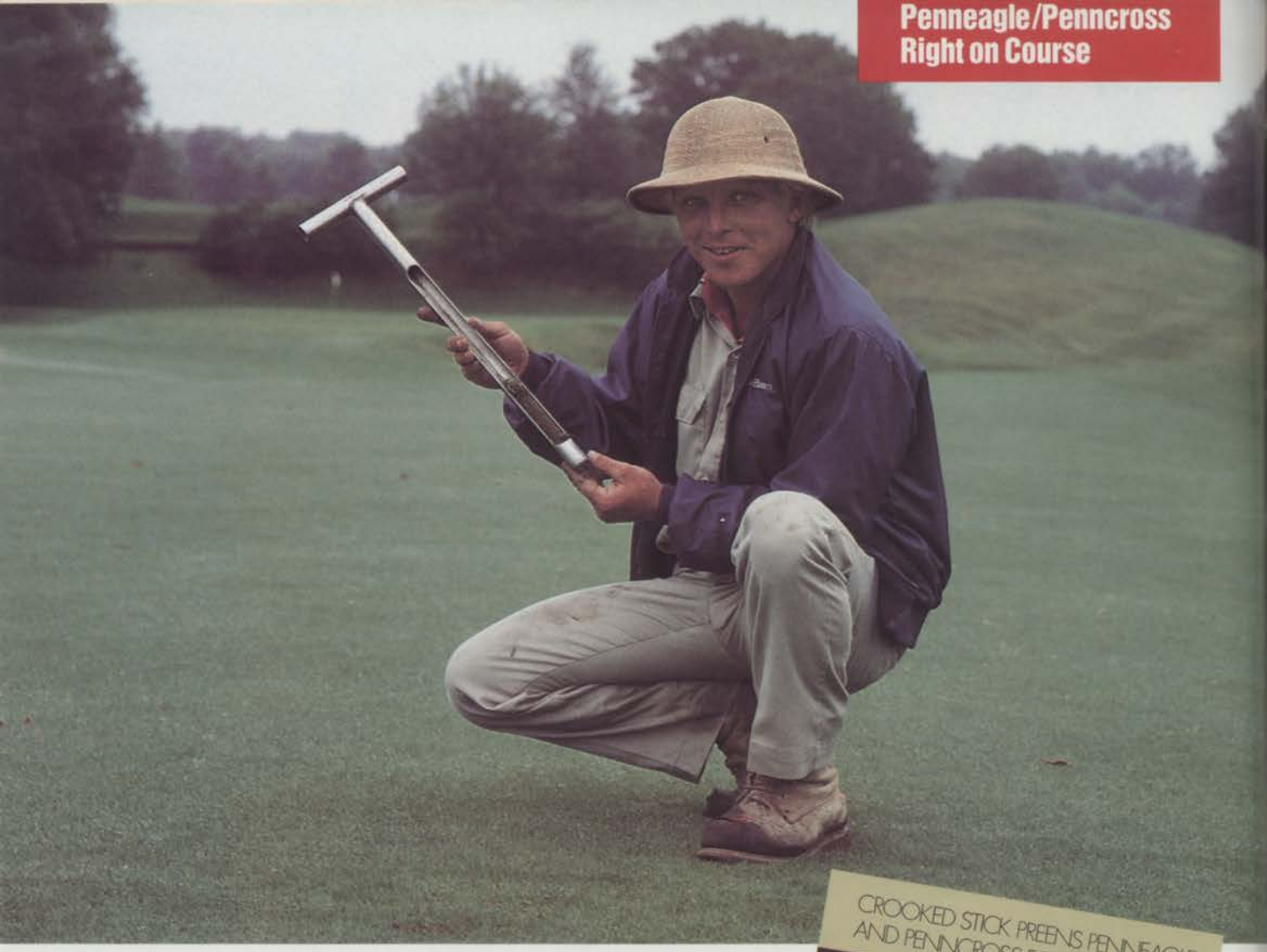

David Riedman, Superintendent, Crooked Stick GC, Carmel, Indiana.

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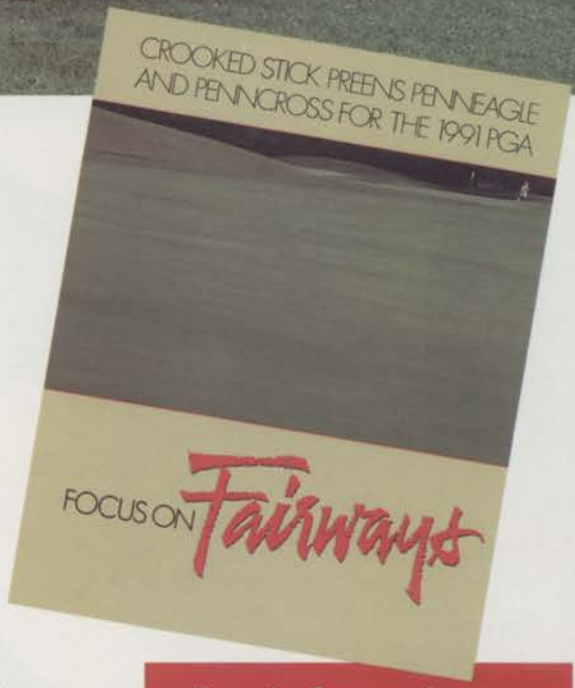

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LANDSCAPE MANAGEMENT®

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AS I SEE IT...

It's our turn

Tom Oyler, the man who made Oyler's Landscaping and U.S. Lawns a leader in the Florida landscape/maintenance industry, couldn't be happier.

He's happy that the 1990s is the "decade of the environment."

People, says Oyler, gravitate to the biggest issues with which they all share a common interest. "The environment is an issue," says Oyler. "And guess what landscapers do? They work with the environment. You are perfectly positioned for the 1990s." And wouldn't it be nice for a change, Oyler asks, to be seen as the leaders in the environmental movement?

Speaking at a recent meeting of the Ohio Landscapers Association, Oyler presented a dozen other ideas to a packed house.

How can landscapers capitalize on the environment, and help preserve it? Well, there's composting and water audits for starters. Yes, it rains often in the Midwest, but is rain an iron-clad guarantee? Yard waste will be landfill *non grata* in 1993. Customers will need suggestions on what to do with it. How about selling rotating composters?

Lobbying and other offensive strategies are also necessary.

Oyler knows of a conversation with a city councilman that helped save Florida landscapers from having to pull permits for *all* kinds of irrigation installation or repair whatsoever. The councilman was simply unaware what problems such legislation would create for the industry.

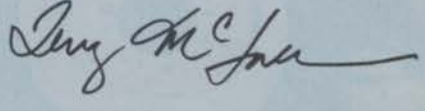
Internally, all companies need a business plan. According to Oyler, many landscapers say business is great, but can't elaborate. "You need a short- (one-year) and long-term (five-year) plan, says Oyler. Develop measuring systems and use them. If you need help, ask your state association or find a consultant.

Network among community groups, like the Chamber of Commerce, and get your best people active in the community as well. Soon, they'll be coming to work with all kinds of ideas.

Are lower-priced companies dominating your market? Develop a measuring and estimating system. "Every piece of your equipment has a capacity," notes Oyler. "Every piece has a production rate the average guy can generate while using it." If you've calculated those rates, and measured the site, and know your break-even point per hour, you're in. The property manager will look at your 27-hour estimate, compare it with the competitor's 8-hour estimate, and wonder what the other guy is leaving out, and just what he's getting for his money.

And above all, *always* be ethical, and insist on quality.

It all worked for Tom Oyler.



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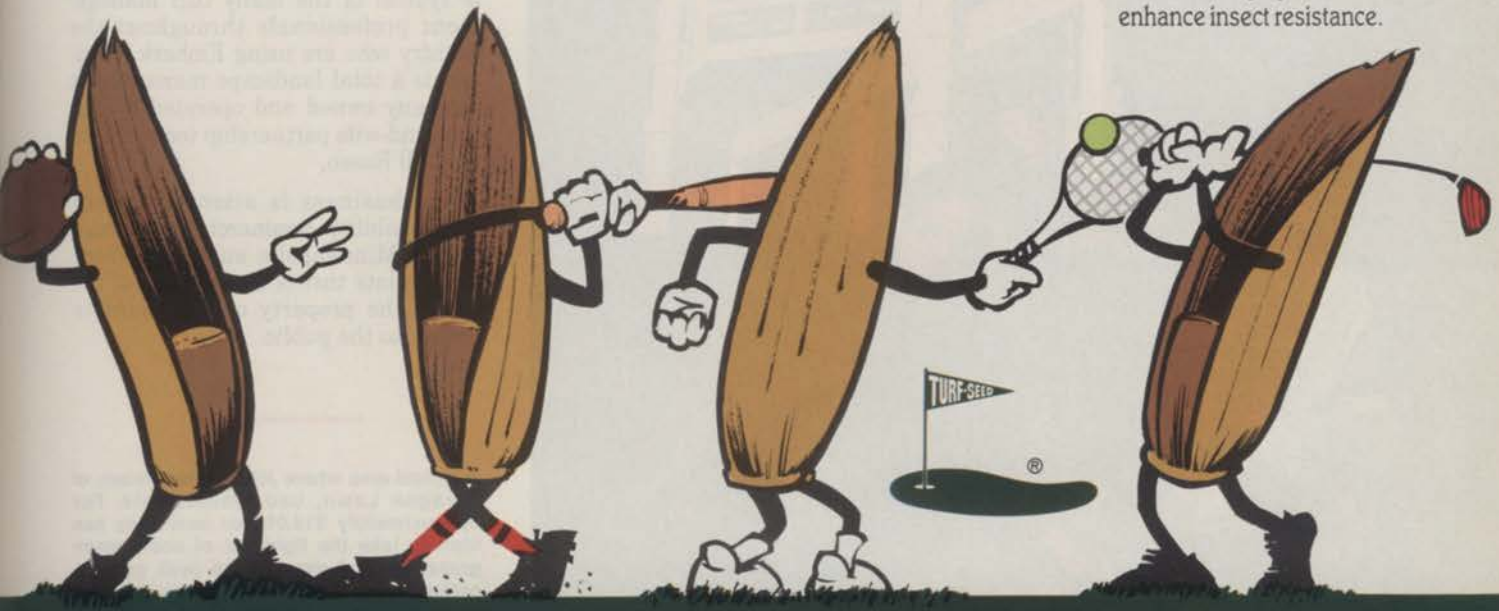

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Using Embark® PLANT GROWTH REGULATOR to reduce top growth and clippings

Now, with new formulations of Embark and tank mixes with Limit®, you can *tame* the growth of turfgrasses and reduce the mowing by up to 50% — or you can *slow* it down just enough to make regularly scheduled mowings easier and faster. In either instance, there are no concerns with objectionable discoloration, and the reduction in cost is very significant.

Everett Mealman, President
PBI/Gordon Corporation

The Embark PGR programs for growth regulation of fine turf are surely the most important developments to date in landscape management. They can dramatically increase the productivity of turf managers . . . and productivity, of course, is the ultimate generator of profits.

The recommendation for maximum growth suppression of cool-season fine-turf species is a tank mix of Embark Lite and Limit.

Embark Lite (Mefluidide) is specially formulated and labeled for use on fine turf. And Limit is amidochlor, the root-absorbed turf growth regulator developed by Monsanto and recently acquired by PBI/Gordon.

This easy-to-handle tank mix, when applied to cool-season grasses prior to the major growth period, will reduce the number of mowings up to 50% for five to six weeks at a cost of approximately $45.00 per acre — the average cost of one mowing.

But that's only part of the good news: Turf discoloration is avoided with this combination, when used as directed. At the end of the six-week cycle when untreated turf tends to fade, the release of pent-up energies in the Embark Lite/Limit-treated turf results in a rich, vibrant green color.

And, notice, we haven't even mentioned the environmental bonus of reduced clippings.

On the other end of the Embark programs, an application of just Embark Lite will by itself slow down the growth for three to four weeks to such a degree that the mowers will virtually float over the turf . . . clippings will be significantly reduced . . . you'll be able to stay on schedule even during the peak growing season . . . and the cost will be only $18.00 per acre.

What users say

Paragon Lawn of Edina, Minnesota is typical of the many turf management professionals throughout the country who are using Embark. Paragon is a total landscape management company owned and operated by the husband-wife partnership team of Dan and Jill Rosen.

The business is oriented toward high-visibility commercial properties in the Minneapolis suburbs, where immaculate turf is a vital part of the image the property owners want to project to the public.

A typical area where Jill and Dan Rosen, of Paragon Lawn, use Embark Lite. For approximately $18.00 per acre they can literally take the fight out of cool-season grass, so that even in the peak growing period they not only can stay on schedule but the mowed premises will maintain their freshly cut appearance longer.

On several properties, Paragon has total responsibility for designing and executing the complete program on an annual bid basis. "Such property owners don't really care what we do or when we do it," says Rosen. "The issue is that a constant image of quality and neatness be maintained."

In such instances the Rosens factor into their bid an Embark Lite/Limit tank mix treatment twice a year. Once in the spring, ahead of seedhead emergence, and a repeat prior to the fall growth season.

"It reduces our mowing costs by more than 50%, at a cost of less than $45 per acre, while actually improving the appearance of the grass . . ." states Rosen.

On the other hand, Paragon has many customers who are on a regular mowing schedule. "We get paid a flat fee per mow," says Rosen, "and at the peak of the growing season it can be a real back breaker to stay on schedule and maintain a manicured appearance."

"This is where Embark Lite is ideal. During the peak growing season, we can definitely put money in the bank by spending $18 per acre out of our own pocket for a treatment of Embark Lite that lasts three to four weeks. It eliminates double mowing . . . it makes clipping clean-up a breeze . . . it takes pressure off men handling the mowers . . . and, best of all, it keeps us on schedule."

Interestingly, the Rosens were hesitant about getting started with Embark, and actually had a gallon in their machine shop for a year before they opened it. Like so many turfgrass professionals, the concept of suppressing growth made them uncomfortable in light of the fact that they had always measured turf quality and health on the basis of how vigorously it was growing.

Consequently, the Rosens started out very cautiously and tested both the Embark Lite/Limit tank mix and the Embark Lite *mowing aid* program in low-profile areas and expanded the total commitment as the evidence became overwhelming.

The Beauty of Embark Lite/Limit Tank Mix

Above: John Van Haften, director of research and development for PBI/Gordon, demonstrates the dramatic effectiveness of an Embark Lite/Limit tank mix. This test plot of bluegrass and ryegrass in suburban Kansas City was treated on April 25, 1990. It was mowed once, on May 1 after the PGR kicked in, and never touched again until this photo was taken on May 25. This dramatic reduction in growth occurred in spite of abundant rainfall and excellent growing temperatures.

Embark is the original, undisputed leader of all PGRs for use on turfgrass. It is foliarly absorbed and translocated to the growing points of a plant, and redirects the energy to the roots, thus preventing seedhead development and stem elongation.

For almost ten years, Embark has been virtually unchallenged for use on low-maintenance turf such as roadsides and hard-to-reach areas.

But use of Embark on highly visible fine turf was not recommended until 1986, when PBI/Gordon researchers, as well as several universities, had proven that tank mixes of Embark and Ferromec® AC Liquid Iron could eliminate the problems of turf discoloration.

Limit, on the other hand, is root absorbed and has been recognized from its inception as *the* PGR for maximum growth suppression on fine turf without problems of discoloration. The major drawback was its cost.

Happily, a tank mix consisting of reduced rates of both Embark Lite and Limit has proven to be the perfect marriage. It results in growth control for five to six weeks; control of seedheads and stem elongation; reduction of clipping volumes; strengthening of the roots . . . and all of this for only $45 per acre.

New Tank-Mix Combo!

Special Get-acquainted Offer on Embark Lite and Limit

Offer consists of a Combo Pack containing two 1-quart bottles of Embark Lite and one quart of Limit. When tank mixed, this combination will treat one acre of cool-season turfgrass and will give you a clear and rapid understanding of what Embark Lite/Limit can do for you. And the evidence will reach you in time to expand the program yet this year, beyond your original test area. See your PBI/Gordon distributor or . . .

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GREEN INDUSTRY NEWS

APRIL 1991, VOLUME 30, NUMBER 4

LANDSCAPE MANAGEMENT

SEED

U.S. economy and weather influence turfseed buyers

NATIONAL REPORT — A number of turfseed varieties appear to be readily available at fair prices, say golf course superintendents and landscapers.

Indeed, recent reports out of the Pacific Northwest, where most of the world's turfseed is produced, indicate that there may be an oversupply of many varieties. Whether the current economic recession has an impact on seed use this spring and summer remains to be seen.

One superintendent that it won't affect is Jerry Coldiron of Boone Links Golf Course in Florence, Ky.

"The recession is not affecting our course at all," Coldiron admits. "We're recession-proof; Boone Links is in the greater Cincinnati airport area, where things are booming.

"Chemicals are getting so expensive, though, that I don't mind losing a little grass. It's just a personal philosophy, but I've actually been doing more renovation lately and using more seed, especially perennial ryegrass."

Seed buyers in parts of California may be challenged by drought.

Conditions are "very serious," says Peter Prentice, superintendent at San Luis Bay Golf Course in Atascadero, midway between San Francisco and Los Angeles.

Jerry Coldiron: more seeding rather than less.

Prentice now has kikuyugrass on fairways and roughs. He has ordered modest amounts of a ryegrass blend and bentgrass.

For drought conditions, Prentice will also likely look to both turf-type tall fescue and buffalograss. In any case, he intends to make only modest seed purchases.

A different picture emerges for northern California golf course superintendent Donald Roller at Eureka Golf Course.

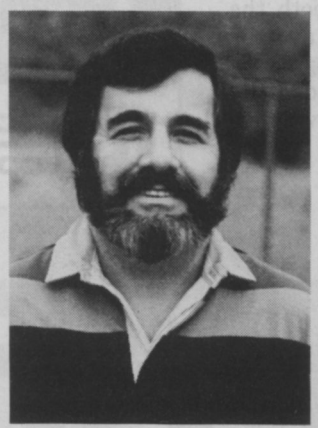
Roller, who buys seed locally and not often in bulk, has successfully maintained plush tee and fairway areas with only spot plantings of ryegrass.

A continent away, Tom Humphreys of Ireland-Gannon Associates, a residential landscaping firm in Norwich, (central) N.Y., usually makes a modest one-ton seed purchase each season.

Availability and price fluctuation have not been problems in his area. The only small change the firm may make is to experiment in some varieties to combat a fungus problem.

Landscaper Dennis Dautel of Clean Cut in Austin, Tex., has found a dwarf fescue to be particularly drought-resistant in his working area, but the solution to another common problem eludes him.

"We are trying to develop a seeding which will be a year-long program—one we won't have to overseed, which can be expensive," says Dautel.



Norman Gray, Jr.: seed prices generally lower.

Dautel notes availability of most common seeds is good in east central Texas. The company is not shopping price this spring.

Norman Gray, Jr. of Transit Seeding, Norfolk, Mass., likes what he sees.

"A year-and-a-half, two years ago," remembers Gray, "the issue was water conservation. The better bluegrass blends would have 40 to 50 percent bluegrass in them. The balance would be fescue or perennial rye."

In response to dry weather, Transit offered mixtures with 25 percent bluegrass, the rest rye and fescue.

Although drought is not a big challenge in the East, Gray says he still recommends drought-tolerant blends, unless the customer is set on more bluegrass.

For low-maintenance needs, such as hard-to-reach slopes, Gray uses a blend dominant in K-31 tall fescue, clover and red top.

"Then, of course, we get the customer who wants low maintenance and aesthetic appeal," in which case Gray recommends a wildflower seeding in combination with hard fescue.

"Seed is definitely available at lower prices since last fall," says Gray. "We've been able to modify our prices downward where able." □

ASSOCIATIONS

Departing president urges responsible management, education on golf front

LAS VEGAS, Nev. — The role of the golf course superintendent is changing and intensifying, says Gerald Faubel.

In his final speech as president of the Golf Course Superintendents Association of America (GCSAA), Faubel said watchwords are "environment" and "education."

"We are on the brink of new understanding based on scientific research of the uses and benefits of golf courses and the urban and suburban ecosystems they provide," he said.

"The environmental agenda will continue to create new challenges that will demand an action of the golf course industry," promised Faubel. "It is important as stewards of the land to be leaders in the environmental arena."

Faubel, superintendent of the Saginaw Country Club in Saginaw, Mich., said the Turfgrass Information Center (TGIF) at Michigan State University offers the most current technical information to superintendents through computer link-up, telephone and mail response.

That service is coupled with the association's six-point Environmental Maintenance Program (EMP), an educational series that Faubel said raises professional standards.

The EMP, with 14 seminars now under development, focuses on underground storage tanks, integrated plant management, employee safety, water quality and application, golf course development and storage, disposal and recycling.

Faubel said superintendents with those skills and other professional certifications in the resume will be in demand in years ahead.

Faubel also advised superintendents to cultivate contacts with local media, get involved in area government and work to create a positive public perception of the value of green space in the community.

"Golf courses," Faubel said, "are assets to the community. This must be communicated to the public (and) it is our job to do so.

"Any instance of noncompliance can and will be magnified under the close scrutiny of the public and media," he said.

—*Jack Simonds*□

Shown here are the GCSAA's board of directors for 1991-92, left to right: (standing) directors Charles Passios, Randall Zidik, Joseph Baidy, Gary Grigg, Bruce Williams; (seated) Randy Nichols, secretary/treasurer; Gerald Faubel, immediate past president; Stephen Cadenelli, president; William Roberts, vice-president. All are certified golf course superintendents.

Knowledge essential, says new president

LAS VEGAS, Nev. — President Bush wanted to be "the education president."

Stephen Cadenelli wants to forge a similar path, but for golf course superintendents.

The new president of the Golf Course Superintendents Association (GCSAA) says "professionalism through education" is a motto he plans to live by throughout his GCSAA term and beyond.

"I never want to stop learning, says the GCSAA's 55th president, who is the superintendent at the Metedeconk National Golf Club, Jackson, N.J.

"I don't believe there is a substitute for education. I truly believe there will be no way to survive and function in this world as a turfgrass manager without a broad educational background."

Environmental issues are at the top of Cadenelli's "to do" list, prmiarily in areas of professional and public education.

"It is essential that GCSAA help its members meet their responsibilities to the environment. We also must go on educating the public as to the benefits of golf courses and of the fact that, in the capable hands of highly educated superintendents, golf courses are a positive contributor to the environment," Cadenelli says.

According to Cadenelli, a "continued working relationship" between the United States Golf Association and the Environmental Protection Agency bodes well for golf. "The results from these efforts," says Cadenelli, "will help insure the game's future."

More than 16,400 people attendend the assocation's show here in February. □

MANAGEMENT

Planning your business

OCEANSIDE, Calif. — From Smith-Huston, Inc., a management consultant firm, comes a new book called "Strategic Planning for Landscape and Irrigation Contractors."

The $49 book provides a step-by-step guide for analyzing your busines and includes a 12-month plan of practical steps to make business improvement changes.

The book was written with strategic planning processes for landscapers and irrigation contracts who generally operate under $10 million in gross annual sales.

Address for Smith-Huston, which also offers other business services, is: P.O. Box 4433, Oceanside, CA 92052. □

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GOLF

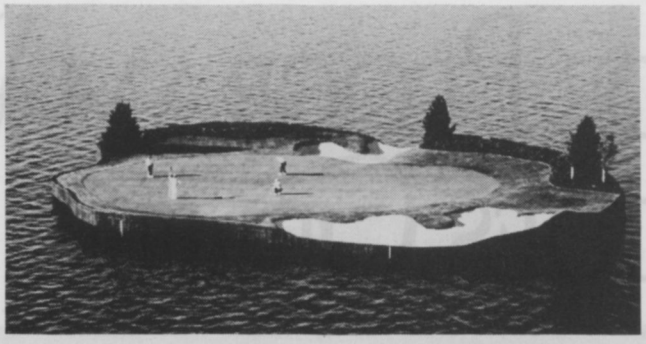
Unique floating green 'nothing special' to keep up, according to superintendent

COEUR D'ALENE, Ida. — The world's first floating golf green was unveiled at Coeur d'Alene Resort's golf course here April 1.

The 14th green floats between 100 and 150 yards offshore. To golfers, it will look much like any other green, complete with trees, sand traps, flower beds and a bentgrass putting surface. Golfers will have to board a small ferry to get from the fairway to the green.

"We have a custom-made pontoon boat stored in our boathouse," notes superintendent Dan Moore. "We'll be able to transport all the equipment—including a push rotary or Flymo for rough areas—in the boat."

Moore says some consideration was given to designing a bunker in which to "hide" maintenance equipment on the island. "There's not much to maintain, though, really," Moore says. "It really is nothing out of the ordinary as far as maintenance."



The flotation system is, though. The 15,000 sq. ft. green sits on more than 100 separate concrete modules with solid expanded polystyrene cores. Built in two layers with a sandwich of metal and foam between, the modules are locked together by an intricate system of 550 vertical through rods. Each module is 10 by 30 feet and weighs 25,000 lbs. The system was designed by Bellingham Marine Industries, Bellingham, Wash.

Runoff, which could contain fertilizer and pesticides, is not allowed to flow into the lake. All water coming down through the soil is collected and sent to an onshore treatment plant via an umbilical cord. Two mechanical rooms beneath the green contain this system and winches that adjust the hole's distance.

The course sits on approximately 150 acres of land that housed a lumber mill for more than 90 years, so environmental concerns weighed heavily on its design. The golf green is stationed on Lake Coeur d'Alene where the mill once floated more than 30 acres of logs at a time. Using this area for the green actually returned more than 20 acres of lake to public use. □

LAWN CARE

Public awareness campaign helps customers understand

HUDSON, Ohio — A unique concept in customer relations has been implemented by one of the largest lawn care companies in the Midwest.

The Lawnmark Environmental Committee will provide information to the public on environmentally responsible lawn care.

"We will help continual development of Lawnmark's internal systems and will be a voice to the public on issues of importance to consumers," says Dr. James Wilkinson, Lawnmark's chief operating officer.

Lawnmark president J. Martin Erbaugh believes the committee's information will not only help the public but also the company. "We have already reduced pesticide use by more than 35 percent in areas of grub and weed control without sacrificing lawn quality," he notes. "This has been accomplished mainly through equipment improvements and intensive employee training.

"This new environmental committee will assist Lawnmark to further reduce usage without sacrificing quality or customer satisfaction. This is part of our commitment to environmental responsibility."

Members of the committee are Wilkinson, Lawnmark vice president Mark Laube, attorney Stephen G. Brooks, county extension agent Jim Chatfield and LANDSCAPE MANAGEMENT technical advisors Dr. Marty Petrovic of Cornell University and Dr. Jack Hall of VPI-SU. □

Dr. James Wilkinson: new program provides a 'voice to the public'

ACADEMIA

Budget ax falls on SUNY's hort programs

RIVERHEAD, N.Y. — The State University of New York/Farmingdale's horticulture department hopes state lawmakers will be generous in funding SUNY educational programs for 1991-92.

A recent fundraising campaign by the Long Island Nurserymen's Association raised $105,000 from industry, but the department still needs $250,000 to preserve the curriculum. More than $2 million in cuts have been made to university programs across the state.

Budget battles were on at press time, to meet the April 1 budget deadline.

In a politically motivated role-reversal, Gov. Mario Cuomo is apparently trying to make drastic spending cuts to raise New York from fiscal oblivion, and thereby improve his chances for the Democratic presidential nomination in 1992, should he decide to run.

"We're trying to get support from the state assembly and state legislature to get additional funding back in the budget," says landscape contractor Gus Wade of Wade Associates, Wyandanch, N.Y.

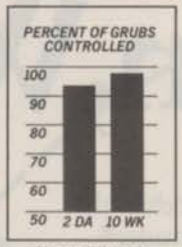
continued on page 22

When it comes to grubs, it's not enough just to suppress them.

You want to squash them. Pulverize them. Grind them into dust. Send the little buggers to the root zone eternal.

And who could blame you?

After all, this one creature has probably baffled more turf professionals, made a mockery of more chemical company claims, than all other turf insects combined.

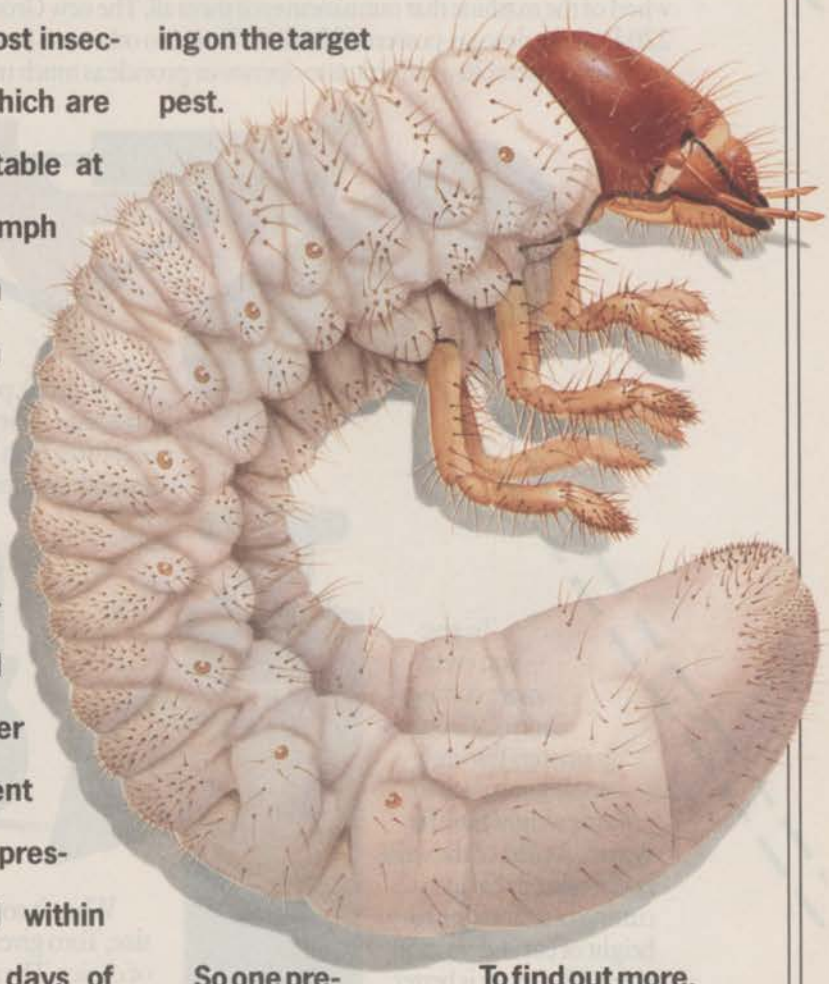


Compiled from 18 university trials, 1985-86.

Triumph® is changing all that.

Unlike most insecticides, which are unpredictable at best, Triumph has been proven in over ten years of testing to consistently rid turf of over 90 percent of grubs present. And within just 2-3 days of application.

Better yet, once applied to the soil, Triumph keeps on working for up to 10 weeks, depending on the target pest.



So one preventive application in late summer or early fall is all that's needed to protect turf from costly grub damage.

And protect you from losing what profits you have made to callbacks.

To find out more, contact your turf products distributor or Ciba-Geigy representative.

TRIUMPH

HOW TO SQUASH A GRUB.

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For retail sale to and use only by certified applicators or persons under their direct supervision, and only for those uses covered by the applicator certification.

This Time, We Did Competition, We Out

To make a dramatic turnaround in your productivity, put yourself behind the wheel of the machine that outmaneuvered them all: The new Groundsmaster® 220-D or the new gas-powered 224 from Toro. No other out-front rotary mowers are as maneuverable, as effortless to operate or provide as much trim productivity.

Fourlink power steering is your link to unmatched maneuverability. Now operators can make sharper, easier turns with less fatigue. This makes trimming around any obstacle quick and almost effortless.

To give you even more cutting control, Groundsmasters feature a single knob deck-to-tractor weight transfer system. A twist of the wrist is all it takes to balance cutting unit flotation to height of cut and traction needs. The result is better traction and better flotation without scalping.

When it comes to engine size, Toro gives you the power of choice. The new Groundsmaster 220-D features a 20 hp liquid-cooled, 3-cylinder Mitsubishi diesel engine. The new Groundsmaster 224 gives you the same engine in a gas model, providing you with the durability diesels are known for, but with more power. Both give you all the speed and power needed for the most demanding jobs.

The Groundsmaster 220 also is available with a 20 hp air-cooled gas engine.

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n't Overpower The maneuvered Them.

A small, compact wheelbase provides a small uncut trim circle and tight turn-around enabling you to trim close around any obstacle. Just what you need to get into or out of tight areas.

With all these performance features, it's obvious why the new Groundsmaster 220-D and 224 are so popular. And why Toro is the leader in out-front riding rotary mowers. To request a demonstration, call your local Toro distributor or contact Toro at the address below.

TORO.

The Professionals That Keep You Cutting.

A patented, heavy-duty carrier frame with floating cutting decks allow the cutting units to follow ground contours for a superb quality of cut. For added cutting control, there are three decks to choose from: 72", 62" or 52". And the 52" is available with an optional grass collection system.

The Toro Company, Commercial Marketing Services, 8111 Lyndale Ave. So., Minneapolis, MN 55420.

Circle No. 152 on Reader Inquiry Card

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greenskeeper

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Circle No. 127 on Reader Inquiry Card

NEWS BRIEFS

LANDSCAPE DEGREE... Columbus State Community College in Columbus, Ohio, now offers courses to fulfill a degree as a Landscape Technician. "Students gain an understanding of plant material and landscape maintenance, both areas that help designers do a better job in creating designs that last longer," says **Steven C. O'Neal,** faculty and program coordinator of the program. Internships are available with companies in Cleveland, Cincinnati, New York and Florida. For information, call (614) 227-2400.

RIGHT-TO-KNOW... The Professional Grounds Maintenance Society (PGMS) now offers a complete right-to-know training program for the landscape management industry. The program includes a training manual, videotape, employee handbooks, compliance instructions, forms and training certificate. For costs and other information, contact PGMS at (301) 667-1833.

ON LEAVE...is **Dr. Paul Rieke,** soils specialist from Michigan State University. Rieke is on a six-month sabbatical in New Zealand at Massey University, where he will begin a book on turfgrass soils and fertility. Rieke will also visit turfgrass installations throughout New Zealand. Look for a report from the good doctor at next January's Michigan Turf Conference.

YES, VIRGINIA... According to a report from AP Newsfeatures, turf managers in Virginia have something to look forward to: a bluegrass variety that will grow will in the acid soil there. According to the report, scientists at the USDA in Beltsville, Md. are concentrating on breeding plants to suit environmental extremes. Research projects include turf and bedding plants.

TV COMPOSTING...A new video produced by Compost Productions entitled "Composting: Recipe for Success" demystifies the composting process and offers viewers a simple, easy-to-follow method for making clean, odor-free soil-conditioning material. Though the video was produced mainly for home gardeners, host **Cort Sinnes**, a syndicated columnist, writes a compost recipe that can also be adapted to landscape operations. For a copy, mail $17.95 to International Marketing Exchange, P.O. Box 775, McHenry, IL 60051. For more information, call (815) 363-0909 or fax (815) 363-0933.

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1986: #1 IN TRUCK CUSTOMER SATISFACTION
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1989: MOST TROUBLE-FREE TRUCK LINE IN AMERICA
1990: #1 IN TRUCK CUSTOMER SATISFACTION
1990: MOST TROUBLE-FREE TRUCK LINE IN AMERICA

We've always believed that if we made good trucks, word would get around. And that's what's happening, if our rankings in recent J.D. Power and Associates surveys are any indication. This year, for the fourth time in the last five, our entire line of trucks ranked number one in customer satisfaction.*

And Mazda received the award for most trouble-free compact truck line in America for the second straight year.** We think that's a pretty good indication of what you, as a fleet operator, can expect from Mazda.

Choose from a complete range of models, 2- and 4-wheel drive, and a choice of engines to suit any purpose. All with standard features like confidence-inspiring rear anti-lock brakes. And all backed by our 36-month/50,000 mile, no-deductible, "bumper-to-bumper" warranty–one of the best basic warranties† in the truck business.

To get the lowdown on the complete line of tough, reliable Mazda trucks, call our National Fleet Sales office at (714) 727-6453. As you'll quickly see, your business can benefit from choosing Mazda. Because only our reputation precedes us.

*J.D. Power and Associates 1986, 1987, 1988, 1990 Light Duty Truck Customer Satisfaction with Product Quality and Dealer Service.SM **J.D. Power and Associates 1989 and 1990 Compact Truck Initial Quality Survey.SM Based on owner reported problems during the first 90 days of ownership. †Contact the National Fleet Sales Office for limited-warranty details.

mazda
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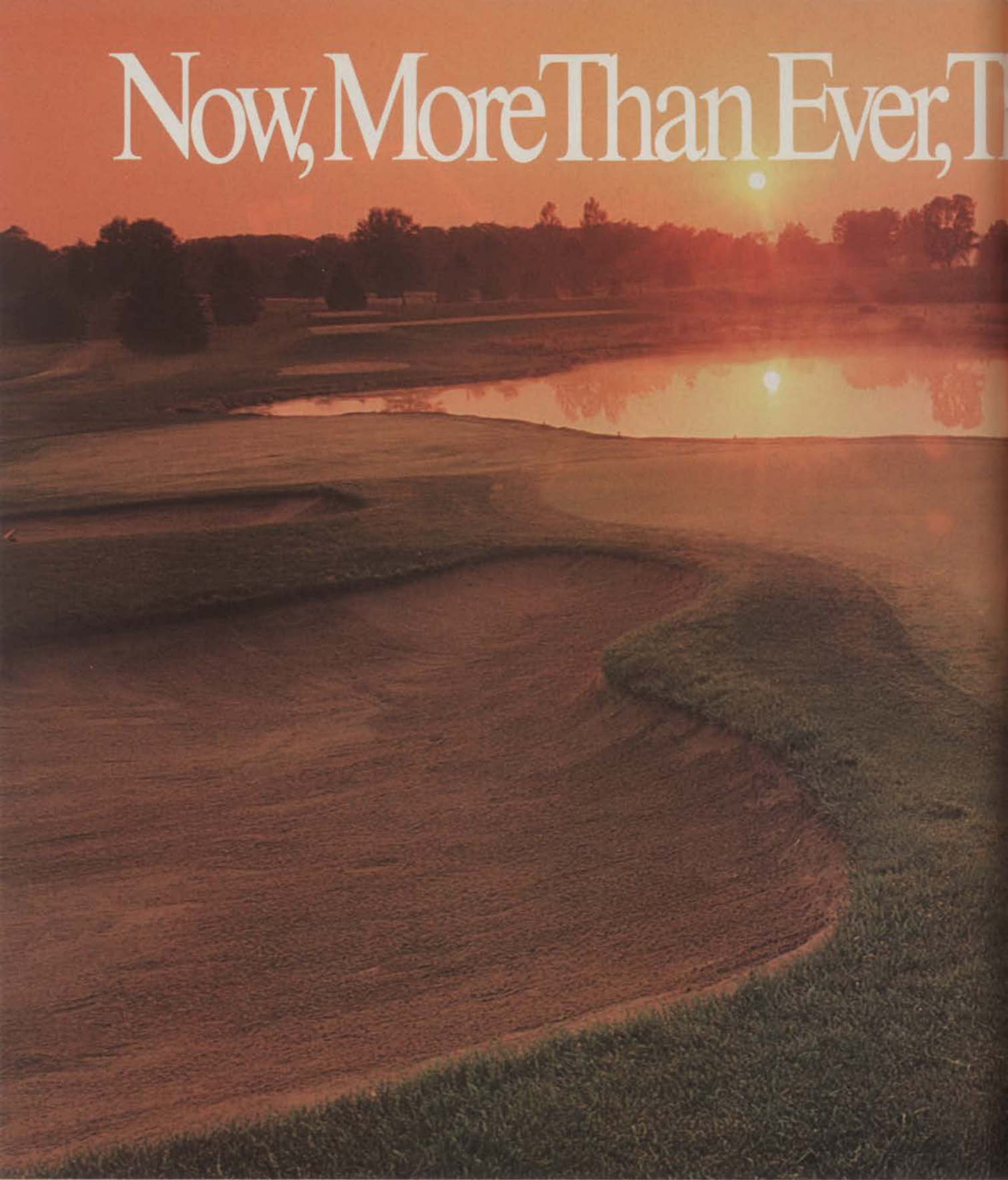

In this age of environmental concern, it's nice to know that there's an effective way to protect your turfgrass, trees and ornamentals against damaging pests without compromising the environment: CHIPCO® SEVIMOL® brand carbaryl insecticide. You see, not only does CHIPCO® SEVIMOL® control your worst turf enemies, it also protects trees and ornamentals against 86 troublesome insects.

Chipco®

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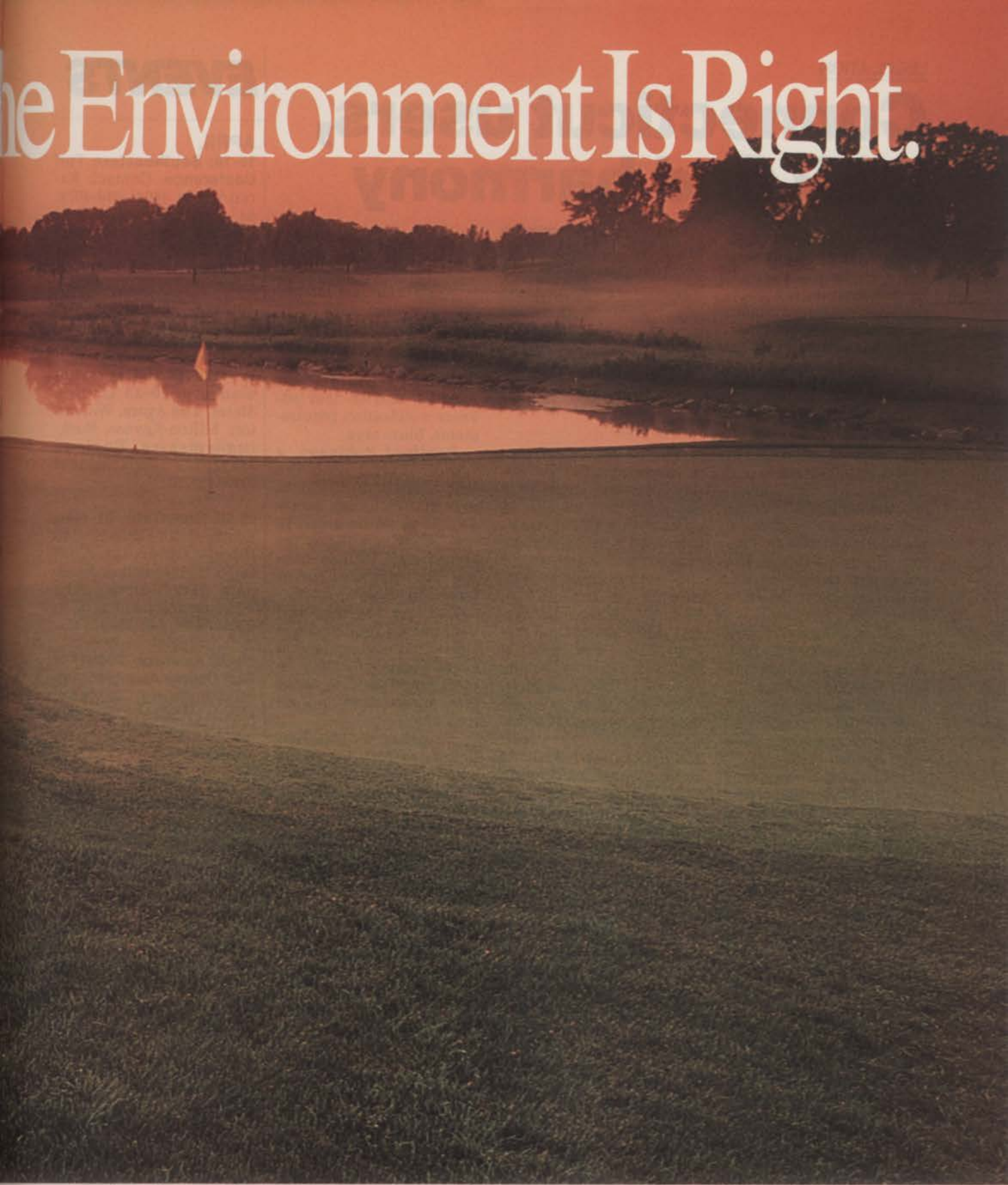

And now it's registered for control of the deer tick—the primary vector of Lyme disease. Yet, despite its proven effectiveness against pests, the low environmental impact of CHIPCO® SEVIMOL® brand means that all this control, economy and convenience does not come at the cost of compromising your responsibility to nature. Get all the facts. Call your turfcare chemicals supplier today.

Sevimol®
Brand Carbaryl Insecticide

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RHÔNE-POULENC

Circle No. 145 on Reader Inquiry Card

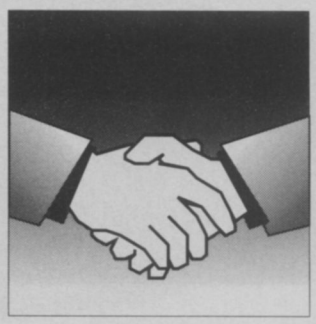
LEGISLATION

Connecticut users, DEP find harmony

HARTFORD, Conn. — New pesticide application posting laws in Connecticut have not only led to a precedent-setting requirement for homeowners, but apparently to new-found harmony between industry users and state environmental groups as well.

The statute took effect this year. Among the law's highlights:

- A requirement to post a 4-by-5-inch sign, including the company's name and telephone number, at the time of exterior application of any pesticide. The law applies to homeowners and lawn maintenance companies.
- A requirement for golf courses to erect a 12-inch square sign at a conspicuous location, and on the first and 10th tees.
- A state-maintained registry of those who want to be notified in advance of an application. To be placed onto this registry, a persons property must abut and be within 100 yards of the affected area's boundary.



The state's Department of Environmental Protection (DEP) will yearly publish a list of those seeking advance notification. (About 83 have applied for advance notification.)

Steven Blum, a spokesman for the Professional Pesticide Users of Connecticut (PPUC), says the new regulations are "workable," and will not affect the cost of doing business. They came about through tough but pragmatic negotiations with the Clean Water Coalition (CWC), an environmental association of 16 state organizations.

Blum says regulations "could have been a lot worse." What has emerged, he says, is a "balanced bill that can be a model for other states to follow.

"The key is that applicators may post when they arrive on the job," he says. That keeps costs down by eliminating an extra trip to the site. Other states have 24- and 48-hour advance notification requirements, Blum says.

Bradford Robinson, a senior analyst with the DEP's pesticide division, says that including homeowners could be a first in the U.S. Exemptions for homeowners include areas less than 100 square feet or fenced-in areas.

But the registry and homeowner requirements have Robinson somewhat concerned; not for their intents, but in practical terms of administration and enforcement.

"We have no idea how this (new law) is going to work. It is our first year. There are all sorts of potential problems enforcing it," Robinson says.

Meanwhile, PPUC executive director Don Kiley, also a state lobbyist for the pesticide industry, says 1987 discussions between the PPUC and the CWC and the following cooperation between the two groups as the law was shepherded through the state legislature, nets a "mutual respect."

"There was some good hard bargaining, yes. But all of us were very satisfied to put this potentially contentious issue to bed.

"We feel this is a landmark agreement that goes way beyond the issues themselves. We have now established a lasting mutual respect," says Kiley, who was an industry negotiator when the two groups jointly approached the Connecticut legislature.

—Jack Simonds□

SUNY *from page 14*

"State university systems in general are getting the ax from our illustrious governor," explains Wade. "I don't know whether (Cuomo) is playing political handball; I think that's what it's boiling down to." Wade also notes the adversarial relationship between Cuomo and Republican Senate leader Ralph Marino as a motivating factor.

"I think," suggests Wade, "Cuomo is hammering Long Island educational institutions to get Marino to bend on something else."

The good news is the support for SUNY by the Long Island horticulture/landscape industry.

"It's really amazing, that in a depressed market, and in a state of (the Persian Gulf) war, we can raise $105,000 from the industry in three weeks. We (solicited) the majority of companies," says Wade, "and they came back swinging. They realize the importance of the horticulture curriculum for the industry."

Chipping in for the cause were landscape contractors, sod farmers, irrigation companies, garden centers and state landscape and gardening associations, many of whom are SUNY alumni.

"Now all we've got to do," says Wade, "is get the politicians to put the money back in the budget."

—Terry McIver□

EVENTS

APRIL

15-16: Southeastern Turf Conference. Contact: Karen White, (404) 769-4076, or write Georgia Golf Course Superintendents Association, P.O. Box 683, Watkinsville, GA 30677.

15-18: First International Conference on Turf, Sheffield University, Sheffield, England. Contact: Institute of Groundsmanship, 19-23 Church Street, The Agora, Wolverton, Milton-Keynes, Buckinghamshire, England MK12 5LG; or call Elaine at (0908) 312511.

18-19: GreenTech '91, Long Beach, Calif. Contact: California Landscape Contractors Association Seminars, 2021 N Street, Suite 300, Sacramento, CA, 95814; (916) 448-2522.

20-30: American Society of Golf Course Architects annual meeting, England. Contact ASGCA, 221 North LaSalle St., Chicago, IL 60601; (312) 372-7090.

22-24: Golf Development Expo, Palm Springs, Calif. Contact: John Ecklein, Crittenden Research Institute, P.O. Box 1150, Novato, CA 94948; (415) 382-2486.

MAY

4-7: Menninger Sunbelt Tree Conference, West Palm Beach, Fla. Contact: P.O. Box 6524, Clearwater, FL 34618; (813) 446-3356.

18-19: Florida Landscape Certification Program, Valencia Community College, Orlando. Contact: Florida Nurserymen and Growers Association, 5401 Kirkman Rd., Suite 650, Orlando, FL 32819; (407) 345-8137.

18-21: International Society of Arboriculture Western Chapter Conference and Trade Show, Modesto, Calif. Contact: Allen Lagarbo, (209) 577-5344.

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CLASSIC NAMED "RECOMMENDED CATEGORY 1" BLUEGRASS
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Circle No. 143 on Reader Inquiry Card

The entrance to Blue Hills Country Club in suburban Kansas City provides a foretaste of manicured perfection. Dave Fearis, right, CGCS at Blue Hills, tells Everett Mealman how he uses Ferromec in the late spring to keep color in his zoysia without excessive growth; and how he uses it again in the fall to protect against winterkill and toughen it up to withstand the winter play the club gets on its dormant zoysia.

Terry Seebach, operations manager of the spray division of R.B. Stout Inc., of Akron, shows off the color they get with Ferromec. Stout is one of the nation's premier landscape management companies, and their calling card for new customers is a surprise spray of Ferromec. Seebach says that first impressions are lasting impressions, and that when new customers see the vibrant green that Stout imparts on the first visit, they never forget it, and they always tell their friends.

Fast, dependable green-up without unwanted growth

Read how golf course superintendents, commercial landscape managers, and residential lawn care operators are using Ferromec® AC Liquid Iron to improve turf color; strengthen its roots; reduce exposure to disease; and minimize unwanted growth.

Everett Mealman, President
PBI/Gordon Corporation

Jim Sweem, of Professional Grounds Management, shows off a mixed stand of bluegrass and fine leaf fescue he has sprayed with Ferromec. Sweem tank-mixes Ferromec AC with Trimec Plus to do everything at once — provide uniform green for the mixed bluegrass and fine leaf fescue, without excessive growth; and knock out nutsedge, crabgrass and broadleaves at the same time.

"I want the green but not the growth," says Dave Fearis, CGCS of the prestigious Blue Hills Country Club in suburban Kansas City, "and that is certainly one of the reasons why I use Ferromec."

As you may know, Kansas City is in the transition zone. Bermuda can frequently winterkill, and bluegrass cannot abide both the summer heat and a horde of golfers. So for a course like Blue Hills, zoysia is the answer for tees and fairways.

Zoysia loves hot weather, and requires only a relatively small amount of water. But it characteristically has required nitrogen to maintain its color. Zoysia, however, is very responsive to nitrogen, and it must be *spoon fed* or excessive growth will occur which is not only back-breaking to the mowing crews but also exposes the turf to disease.

"Ferromec is the answer," says Fearis. "We apply Ferromec on the fairways, tees, and greens about June 15, and we get beautiful color that lasts seven or eight weeks without excessive growth. Interestingly, we get a surprising color contrast between the playing surface of the bentgrass greens and the frog hair, which the golfers like very much."

Of course, in the transition zone, you also have winter. It can get so cold that zoysia has been known to winterkill. But in between arctic blasts, there can be some super days that bring out the golfers in droves.

"We want the zoysia to go into winter in the strongest possible condition," continues Fearis, "so it can stave off winter damage as well as absorb the intermittent play on the dormant turf."

Consequently, we come back again with Ferromec at the 4-oz. rate about September 15. We have never had any winterkill, and the dormant turf holds up very well regardless of how much play we get."

Ferromec on mixture of bluegrass and fescue

If Kansas City is in the transition zone, then Omaha is in the "mixed grass" zone, according to Jim Sweem, of Professional Grounds Management, and knowing about Ferromec activity in this zone has not only opened up some meat-and-potatoes opportunities for him . . . it has also put some frosting on his cake.

You need to know that Sweem has built his business by working with commercial landscape contractors who are involved in mowing. Understandably, such landscapers

would rather not have their schedules interrupted with intermittent spraying chores during times of extreme mowing pressure.

And that's how Sweem gets his foot in the door.

"The 'mixed grass' in Omaha is bluegrass and fescue," says Sweem, "and a problem is that, during the summer, a color differential occurs between the species that many property owners want corrected."

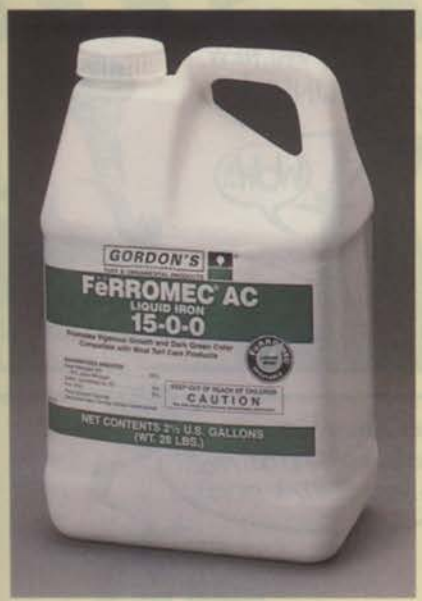
Sweem used to work full time for a fertilizer company, so it was only natural that some landscapers would call on him to straighten out the color with a light application of nitrogen.

"But when you put enough nitrogen on bluegrass to brighten up summer color, you can stress the dickens out of fine leaf fescue," says Sweem, "and it can cause browning, and that looks terrible."

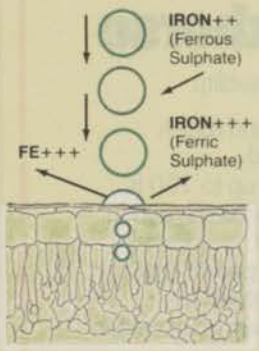
"When I found Ferromec, I found the answer," continues Sweem. "Six ounces of Ferromec and no nitrogen is the solution for summer color in mixed stands of bluegrass and fescue. It produces a beautiful, uniform color that holds for six to eight weeks . . . *and* it doesn't result in the excessive growth you get from nitrogen — you can imagine how mowing contractors love that!"

But here's the frosting on the cake:

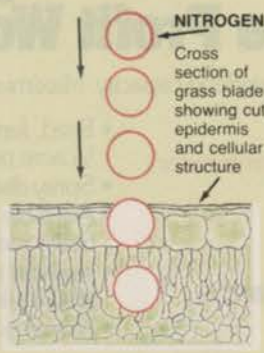
There is a third *mixed grass* in Omaha — nutsedge. "There's really only one herbicide that will knock it out," says Sweem, "and that is Trimec® Plus. The frosting? Trimec Plus can be tank-mixed with Ferromec AC. So a summer green-up can also knock out nutsedge, crabgrass and, of course, broadleaves, if any are present."



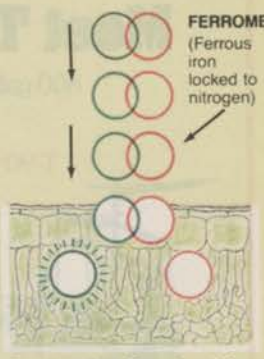
Schematic drawings show why patented Ferromec iron works fast and is so dependable for turf green-up



Iron is essential for the synthesis of chlorophyl — no iron, no green. But grass doesn't like the *taste of iron* and is very reluctant to ingest it. Furthermore, iron must be in the ferrous ++ state to efficiently create green color, and it tends to revert to the inefficient ferric +++ state when exposed to oxygen.



On the other hand, turfgrass loves the *taste of nitrogen* and ingests it with gusto. Nitrogen-induced growth, of course, will pull iron out of the soil and thus create green color, but the amount required to produce color will result in abnormal growth, which in turn causes unwanted mowing and exposure to disease.



Ferromec is a Complex of ferrous sulphate and nitrogen, which locks the iron in the usable ferrous state. Grass loves nitrogen and readily ingests Ferromec, thus delivering the color-producing iron. But at the 5-oz. rate, only .063 pounds of nitrogen per 1,000 sq. ft. is delivered by Ferromec, and excessive growth does not occur.

Dependability is important

Ferromec works! There's no doubt about it! It produces fast, dependable, long-lasting green-up without unwanted growth; but this is not necessarily true for all liquid irons.

To fully appreciate the difference between Ferromec and other brands of liquid iron, you need to visit with someone like Terry Seebach, operations manager of the spray division of R.B. Stout Inc., of Akron, Ohio.

As you undoubtedly know, R.B. Stout is one of the premier landscape contractors in the United States. In Cleveland and Akron, the name Stout is synonymous with sterling.

"We started testing liquid iron back in 1986," says Seebach, "and by 1988 we were pretty well convinced that it didn't have a place in our operation. Our problem with the liquid irons we tried was lack of dependability. We simply could not develop a repeatable program."

But in 1989, R.B. Stout was exposed to Ferromec for the first time as a result of some experimentations they were conducting with Embark® Plant Growth Regulator. "Ferromec totally changed our viewpoint about liquid iron," admitted Seebach. "It works every time; it always works fast; and with 4 or 5 ounces, the color always holds up for seven or eight weeks."

"We know that first impressions are lasting impressions," says Seebach, "so we start off every new customer with a treatment of Ferromec. They *never* forget and they become the best new business getters we could ever have."

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Circle No. 114 on Reader Inquiry Card

Publication tells turfgrass benefits

DES MOINES, Iowa — Homeowners and green industry professionals in Iowa and Minnesota will soon have another source of information on pesticide safety: "The Surface Water Protection Plan."

Edited by Robert Mugaas, a Minnesota extension horticulturist, the reference source is a collection of articles on the proven benefits of turfgrass, and how proper care greatly minimizes the danger to surface water or underground water sources.

Mugaas uses information which has appeared in trade and scientific journals on what effect turf maintenance has on water quality.

"We want to pull some things together that will be helpful in answering questions," says Mugaas, who compares the protection plan with what has been done in some agricultural circles.

"It gives industry as well as the homeowner some idea of what they can do to act most responsibly."

"The Surface Water Protection Plan" will appear in a magazine-size format and as a newsletter. The project is being made possible by a leave-

continued on page 30

CHAPTER I

GROWTH® PRODUCTS LTD.

Nurse Flo, has just opened **Growth Products Turf Grass Clinic**. Meanwhile the guys at the **Blade Club** have their hands full ... OOOPS and the **Weedy Waskles** are up to something devious.

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WOW!!
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to be continued ...

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BENEFITS

from page 26

study grant from the University of Minnesota Cooperative Extension Service.

Added support, Mugaas is quick to point out, comes from Drs. Michael Agnew and Nick Christians, both of Iowa State University.

For more information on publication dates and availability, call Mugaas at (612) 542-1420.

—Terry McIver□

CORRECTION

The "Jobtalk" feature in our February issue neglected to mention that New York golf course superintendents Dennis Flynn and John Carlone were applying Cutless 50W plant growth regulator under an Experimental Use Permit.

Their use of the product did not extend beyond 1987. Cutless 50W is not yet labelled for use in New York state. □

LETTERS

Thanks for the memories

To the editor:

As an old friend of Fred Grau, I want to thank you for your excellent article in the January issue.

Fred's drive and kindly manner will be sorely missed. He was certainly a driving force in our industry. His last dream, the National Sports Turf Council, is still in the formation stage. Those of us involved hope that we can successfully conclude all the organizational work necessary to make this a working organization.

It would be a fitting memorial for Fred.

Allan Shulder
Exec. Dir., PGMS
Cockeysville, Md.

Same name, different super

To the editor:

In the January issue of LANDSCAPE MANAGEMENT, your magazine printed a file picture of me in an article on golf course equipment ("Guide to Landscape and Golf Course Equipment"). Unfortunately, the picture identified me as superintendent of the Rock Island Arsenal Golf Course in Rock Island, Ill. This was a grievous mistake. The person interviewed was Jon R. Scott, not me.

I can understand how this can happen, though it seems to be shoddy editing, as you did, indeed, have a file picture of me from 1988, from a previous interview.

Obviously, no one checked to see if the two Jon Scotts were the same.

One can easily imagine the problems that develop from such a mis-identification. I have, for the past 2½ years, been employed as a consulting agronomist by Jack Nicklaus Golf Services division of Golden Bear International. It is my business to travel most of the Midwest and Northeast region of the country servicing our accounts. It was quite a shock to my clients to learn that I had abandoned them for a position at Rock Island Arsenal! It was no less a shock to my employer, who had to wonder what I was up to, and then explain an apparent mistake in your magaine to upset clientele.

I think that an apology is in order. My confidence in your publication has suffered.

Jonathan L. Scott
Jack Nicklaus Golf Services
N. Palm Beach, Fla.

(You bet an apology is in order! That was, indeed, a file photo that was mismatched with the Jon Scott of Rock Island Arsenal, with whom we conducted a phone interview. Our sincerest public apologies to both Jon Scotts.—ED.)

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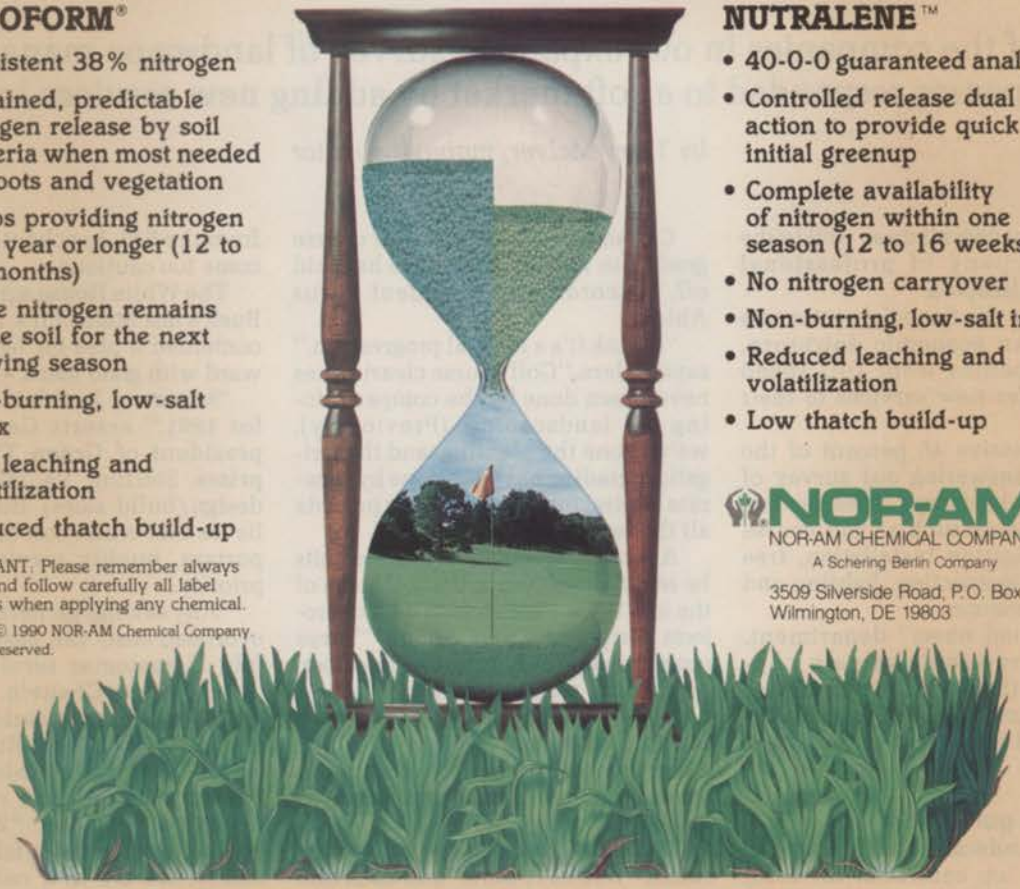

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COVER STORY

THEY CAN'T STAND STILL!

Half of the companies in our expanded survey of landscape management companies responded to a soft market by adding new services in 1990.

by Terry McIver, managing editor

Misery doesn't do so well in the company of professional landscapers.

In 1990, as the financial sector was predicting an economic downturn, many companies went full speed ahead to offer new services to their customers.

An impressive 46 percent of the companies answering our survey of the nation's landscape sales leaders took on services such as golf course grading, irrigation installation, tree care, wall construction, lighting and lawn maintenance.

In the "bad news" department, company presidents remain concerned with the shrinking workforce, "unprofessionals" who give the industry a bad name and rising insurance costs.

Making the golf grade

Carlacio Landscape, Inc., Corona, Calif. is our top contractor for 1990, posting $25.6 million in gross sales for design/build and maintenance services. Carlacio's design/build sales enjoyed a $3 million jump over 1989.

Carlacio began to offer golf course grading in 1990, and "the idea has paid off," according to president Klaus Ahlers.

"I think it's a natural progression," says Ahlers. "Golf course clearing has never been done by the company doing the landscaping. (Previously), we've done the planting, and the irrigation; grading has been done by separate contractors. Now, we can provide all the services."

A prudent speculator, Ahlers admits he sees a slowdown in the golf boom of the late 1980s. "We've seen a lot of projects postponed," says Ahlers. "Three projects were ready to go in November, now they're waiting till April."

Close to the vest

Ahlers proposes that while the nation is in an economic lull, it's important to look to the cause.

"I've been through several (recessions)," relates Ahlers, "and each one seems to be different." The difference in 1990's recession, explains Ahlers, is that it's been fueled by a tight lending policy. Banks are still seeing stars from the S&L knockout, and have become too cautious.

The White House agrees. President Bush's last State of the Union address contained a plea for banks to go forward with good loans.

"Monetary health is *the* challenge for 1991," asserts Gerry Chauvin, president of **Green Thumb Enterprises,** Sterling, Va. ($3.5 million in design/build sales). But he also believes that while cost savings are important, quality service must be a priority.

"Any savings garnered from easing overhead costs can easily be lost 10-fold if customer service is jeopardized," warns Chauvin.

Brian Storm, president of **Terrascaping, Inc.,** Birch Run, Mich. (design/build and maintenance gross sales: $3.075 million), refuses to believe in a recession. "We are led to believe that the sky is falling, when in reality, we are in a reduced growth mode," explains Storm, who echoes the Bush administration's call for aid from the nation's bankers.

continued on page 34

LANDSCAPE TOP 50 MANAGEMENT

RANK	DESIGN/BUILD & MAINT. SALES $ Millions	EMPLOYEES PEAK/YEARLY	NEW SERVICES
1 **CARLACIO LANDSCAPE, INC.** Corona, Calif.	25.6	400/175	golf course grading
2 **ISS LANDSCAPE MANAGEMENT SERVICES** Tampa, Fla.	21.5	650/550	recycling
3 **CAGWIN & DORWARD** Novato, Calif.	15.4	350/225	
4 **THE BRUCE CO.** Middleton, Wisc.	15.2	375/220	
5 **AMERICAN LANDSCAPE COMPANIES** Canoga Park, Calif.	13.7	260/235	water audits, tree care
6 **RUPPERT LANDSCAPE CO., INC.** Ashton, Md.	13.0	170/50	irrigation
7 **GREEN THUMB ENT., INC.** Sterling, Va.	12.0	325/125	staff architect, horticulturist, interior plant maintenance
PARKER INTERIOR PLANTSCAPE Scotch Plains, N.J.	12.0	225/220	
8 **KT ENTERPRISES, INC.** Chantilly, Va.	10.0	250/65	
9 **SOUTHERN TREE & LANDSCAPE** Charlotte, N.C.	8.95	165/100	
10 **TEUFEL NURSERY, INC.** Portland, Ore.	8.0	175/100	
11 **THE GROUNDSKEEPER** Tucson, Ariz.	7.5	300/200	
12 **GIBBS LANDSCAPE CO.** Smyrna, Geo.	7.4	80/70	weekly residential maintenance
13 **ROOD LANDSCAPE CO., INC.** Tequesta, Fla.	7.37	180/150	irrigation
14 **MAINTAIN, INC.** Dallas, Texas	7.1	200/70	
15 **R. GLASS LANDSCAPE CO.** Roselle, Ill.	6.0	250/100	
16 **GROUND CONTROL LANDSCAPING** Orlando, Fla.	5.5	110/90	
17 **CLARENCE DAVIDS & CO.** Blue Island, Ill.	5.38	130/40	
18 **DESIGNS BY LEE, INC.** Stamford, Conn.	5.2	80-100/30	increased maintenance
YARDMASTER, INC. Painesville, Ohio	5.2	26/8	residential maintenance
19 **IRELAND/GANNON ASSOC., INC.** East Norwich, N.Y.	4.8		
20 **LIFESCAPES, INC.** Canton, Ga.	4.7	85/55	nursery, exterior lighting
21 **CHAPEL VALLEY LANDSCAPE CO.** Woodbine, Md.	4.35	90/41	
22 **BATISTA LANDSCAPE SERVICE, INC.** Redwood City, Calif.	4.3	6/2	
23 **HILLENMEYER NURSERIES** Lexington, Ky.	4.0	150/100	
24 **SMALLWOOD LANDSCAPING, INC.** Naples, Fla.	3.7	40/35	in-house arborist, licensed spray technician
25 **VARSITY SODDING SERVICE** Swoyersville, Pa.	3.5	55/20	
26 **NORTH HAVEN GARDENS** Dallas, Texas	3.4	80/60	
27 **L & L LANDSCAPE SERVICES, INC.** Santa Clara, Calif.	3.375	85/75	pest control advising, aquatic consulting
28 **DOERLER LANDSCAPES, INC.** Lawrenceville, N.J.	3.3	80/30	
29 **TERRAIN SYSTEMS, INC.** Phoenix, Ariz.	3.25	7/7	
30 **PENNINK & ARRIMOUR** Bryn Athyn, Pa.	3.2	90/35	
HUNT & HULTEEN Brockton, Mass.	3.2	70/12	arborist service
BLAND BROS., INC. West Jordan, Utah	3.2	63/15	topsoil, sand & gravel production and sales
31 **GREENSWARD LANDSCAPING** Byron Center, Mich.	3.1	50/14	
32 **TERRASCAPING, INC.** Birch Run, Mich.	3.075	51/6	
33 **SOMERS COMPANY OF WISCONSIN, INC.** Stevens Point, Wisc.	3.6	30/8	
34 **STATILE & TODD, INC.** Springfield, N.J.	3.0	23/5	irrigation, site development
ECOSYSTEMS IMAGERY, INC. Encinitas, Calif.	3.0	135/55	
GREENSCAPE, INC. Fayetteville, N.C.	3.0	50/30	
35 **SKB LAWN INDUSTRIES** Tucker, Geo.	2.9	120/65	

LANDSCAPE TOP 50 MANAGEMENT

RANK		DESIGN/BUILD & MAINT. SALES $ Millions	EMPLOYEES PEAK/YEARLY	NEW SERVICES
42	**CONTRA COSTA LANDSCAPING, INC.** Martinez, Calif.	3.0	60/50	
	SKANDIA LANDSCAPING Livonia, Mich.	3.0	70/45	nursery
44	**VIRGINIA TURF MANAGEMENT ASSOC.** Norfolk, Va.	2.3	105/35	
45	**EVERGREEN SERVICES CORP.** Bellevue, Wash.	2.2	70/45	irrigation service and repair
46	**DRAKE'S 7 DEES** Portland, Ore.	2.05	60/25	residential landscape improvement
	PROLAWN Blue Ash, Ohio	2.05	66/25	
48	**CLEAN CUT, INC.** Austin, Texas	2.0	70/50	
	HIVELY FARM & NUSERY, INC. Dover, Pa.	2.0	25/5	
	WHITE OAK LANDSCAPE CO., INC. Kennesaw, Ga.	2.0	75/55	

Klaus Ahlers: Banks recoiling from S&L mess, lending policies strict.

TOP 50 *from page 32*

"For our industry to contine moving forward," says Storm, "we need to have the Federal Reserve Board allow the economy to continue in a growth mode."

Storm, however, foresees new pressure in the form of more taxes, "to help reduce the deficit and help with the clean-up of mismanagement from the '80s."

Storm agrees with many green industry leaders who believe higher wages are essential. "We need to raise our levels of compensation and encourage young people to look at careers in our industry. If we are going to continue with success, the people are the key."

A mature industry

The Bruce Co. of Middleton, Wisc. placed fourth in our 1990 survey, with build/maintenance gross sales of $15.2 million.

Vice-president Arnold Sieg believes the landscaping industry has indeed matured, and he's proud to belong.

"We're more than a 'trade,'" says Sieg. "I can remember 30 years ago, when the saying was that 'anybody could be a landscaper.' (Landscaping) has become recognized as a legitimate force in the (construction) industry."

And as its reputation grows, so do the projects.

"I think you're seeing bigger budgets for landscaping and interior beautification," says Sieg. "And suppliers are recognizing our industry as a major customer."

Managing water

Ahlers says he sees more interest in drip irrigation systems. The company has been conducting a cost comparison between drip and standard irrigation systems.

Ahlers sees a solution to California's water woes: more storage facilities.

"When you look (at possible refinements in) water holding capability, you find that almost nothing has been done," laments Ahlers. "You could get through a drought if you had more storage. There's enough rainfall, just not at the right time.

"When the price for water is prohibitive, you'll see something get done."

"If you put $50,000 of plants into the ground and then go away, you want to make sure the irrigation works," says Tommy Aiello, president of **Rood Landscaping, Inc.**, Tequesta, Fla.

Rood posted 1990 gross sales of $7.37 million in design/build and maintenance. Company maintenance sales ($2.16 million) nearly doubled.

Last year the company hired a licensed irrigation technician to service the needs of the landscape and maintenance divisions, install bubblers, heads, make small repairs.

The final step in Rood's irrigation plan is to promote water-conserving systems for design/build clients, although on a small scale. "We're not looking to get five trucks going or compete with commercial installers," Aiello explains.

People waste water

"We could have two good days of rain," explains Aiello, "and the next morning, you see irrigation systems running. Those systems could be turned off for a week."

Like Carlacio, Rood is exploring drip irrigation. Aiello says tests have been conducted, "to determine the effectiveness of drip irrigation for lawns."

Irrigation has been incorporated into landscape projects at Pleasant Places, Inc. of Mt. Pleasant, S.C. Co-owner, Guy Artigues, says turnaround time is swift, and he can service clients better.

"With subbing," says Artigues, "we don't have as much control. We have people here who are familiar with (irrigation). Our landscaping designer is also capable of producing irrigation designs."

Pleasant Places ($1.25 million in gross design/build and maintenance sales) has also opened a power equipment division, to sell and service mowers, tractors, blowers, edgers and sprayers. Artigues' partner, Jody Peele, carries the ball for the power equipment division.

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THE BEST OF THE REST

The following is a list of companies with revenues between $1.9 million and $100,000 which responded to the survey.

Exotic Flora & Fauna, Ltd., Greenpoint N.Y.
Wheeler Landscaping, Inc., Chagrin Falls, Ohio
AAA Lawn Industries/Color Burst, Atlanta, Ga.
John R. Ross Co., Inc., Dallas, Texas
Chem-Turf/Astin-Russell, Inc., Norcross, Ga.
Coronis Landscaping, Inc., Nashua, N.H.
Zendt Bros., Mt. Clemens, Mich.
Bregenzer's Inc., Alpharetta, Ga.
Mill Bros. Landscape & Nursery, Inc., Ft. Collins, Co.
Pleasant Places, Inc., Mt. Pleasant, S.C.
K.S. Enterprises, Inc., Jacksonville, Fla.
Landscape Services, Inc., Ft. Wayne, Ind.
Four Seasons Lawn & Landscape, Kansas City, Mo.
Greater Texas Landscape Services, Inc., Austin, Texas
Custom Lawn & Landscape, Inc., Olathe, Kan.
J-N-D Co., Inc., Princess Anne, Md.
Natural Resources, Inc., Austin, Texas
C & C Landscape, Tracy, Calif.
Landistar, Inc., Birmingham, Ala.
R. J. Sunday Landscaping, Mitchellville, Md.
General Industrial Contractors, Ft. Worth, Texas
John Lamm of Jackson, Inc. Jackson, Wisc.
Beard Landscape Development, Friendsville, Md.
Andy Gagnon Landscape Contracting, Woodland, Calif.
American Landscape & Construction, Ltd., Iowa City, Iowa
Reliable Landscaping, Inc., St. Louis, Mo.
Inner Gardens, Houston, Texas
M. Snyder's Nursery, Inc., Portland, Ore.
Skoog Landscape & Design, Chadwick, Ill.
Wirth Landscape, Billings, Mont.
Tyler's Landscaping Service, Inc., Rockford, Ill.
Prato Associates, Inc., Burlington, Md.

Lee Mueller: 40,000 door-to-door fliers generate 500 service calls.

Caring for trees

Reliable Landscaping, Inc. of St. Louis, is an example of a smaller company ($350,000 in gross sales) thinking "service." The company now offers tree injection and wall construction.

President Lee Mueller chose tree injection as an effective way to treat tree disease without spray drift.

"All chemicals go directly to source of the problem," says Mueller, who estimates a 50 percent profit margin with the injection system.

Keystone wall installation has also fit well into Reliable's design/build service.

"We were a small grass cutting operation 11 years ago," Mueller says. "Now we have one crew doing tree work, one doing lawn maintenance, and another that does sod and keystone walls."

Time-saving service

Virginia Turf Mananagment Associates, Inc. of Norfolk, Va. ($2.3 million in sales) provides soil samples for $10.

"The cooperative extension takes too long," says company president Bill Hoover, "and then it's too late to do anything about the problem." After a $5000 investment in equipment, the company now tests for nutrients, pH and soluble salts.

Small engine repair is also new at Virginia Turf. "We've got a large metropolitan area here," says Hoover. "When we moved to downtown Norfolk eight years ago, it was a blighted area." Today, says Hoover, six-figure homes dot the revitalized urban area. Hoover's is "a captive audience."

Higher standards needed

Mueller says licensing and enforcement has become more stringent in Missouri.

"Every time the Chrysler plant lays off 5000," relates Mueller, "you've got 250 to 300 people with pick-up trucks, a chain saw, a rake and lawnmower who become instant landscapers and want to put down chemicals and (perform) tree trimming, and all the little things that require skills and licenses."

The St. Louis Arborists Association, of which Mueller is president, is taking care of its own, so that the government doesn't have to. Mueller says the association established an ethics committee to oversee the performance of new licensees.

"When someone wants to join," explains Mueller, "they're on proba-

Brian Storm: "Raise levels of compensation, encourage young people to look at careers in our industry."

tion for a year. We look at their work and talk to their customers. Any time we find someone who has done something they're not supposed to, (such as improper pruning or tapping), we have a talk with them."

Test for competence

"The harder times are, the more people you see with rakes sticking out the back of the truck," says Hoover.

"The one that comes to mind is the guy who had a 55-gallon drum, and a water pump hooked to a gasoline motor. He had four sections of garden hose and a regular garden type nozzle, spraying shrubbery."

Hoover would like to see licensing for general landscaping and lawn care knowledge. "Anybody who calls

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ONCE™ eliminates labor and other costs of fertilizer re-applications because you apply it only once per season.

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ONCE was developed using our OSMOCOTE® resin coating technology, the leading controlled release fertilizer worldwide. This unique system meters nutrients continuously—every day—for a full season.

Because release is based *only* on temperature—not water, pH, or bacteria as with other fertilizers—nutrient availability matches turf and plant growth needs.

ONCE is available now in a variety of analyses and 8-9 and 5-6 month longevities. There is also a formula specifically for ornamentals.

Contact your Grace-Sierra turf/landscape distributor or call us toll-free at 1-800-492-8255.

Use ONCE, just once, for the best results all season long.

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Circle No. 117 on Reader Inquiry Card

Bill Hoover: Wants standard test of general industry knowledge.

themselves a landscaper should have to take a moderate test to show they meet some basic requirements. I prefer it coming from business rather than government. We could help implement a single set of guidelines and testing program, to reassure the public."

(ED. NOTE: LANDSCAPE MANAGEMENT expanded its 1990 "Top 50" survey to include all exterior contractors listed as members of the Associated Landscape Contractors of America. A total of 115 companies responded; 35 requested we not publish sales figures.) **LM**

Teamwork approach good for business

JoAnn Smallwood: landscape architecture is an art form.

A multi-unit development at Villa Mare, end product of the Smallwood team approach.

The warm climate and reputation of Naples, Fla. as a winter retreat have brought good fortune to Smallwood Landscaping, a company started in 1973 by owner/founder JoAnn Smallwood.

Her approach to landscape architecture? That each step of the design process plays an equal part. Each division draws on the technical and field expertise of the other. Each provides constructive criticism that leads to complete, site specific and cost sensitive designs.

Numerous awards have come Smallwood's way, from the Florida Nurserymen & Growers Association, American Society of Landscape Architects and Associated Landscape Contractors of America.

Three-part process

Employees in Smallwood's architecture, construction and maintenance divisions are cross-trained to insure that everyone recognizes the talents of the other, as well as the constraints, expertise and responsibilities of their respective disciplines.

The landscape architecture division is guided by the belief that design is not static, but rather a three dimensional blend of colors, textures and forms that combine to help create exciting spaces that evolve, mature and change.

The construction and maintenance divisions support the design/build process as the project moves from blueprint to reality.

Plant material is selected based on site-specific qualities.

Maintenance, of course, is a crucial follow-up. Crews are trained in proper turf care and pruning. Bright color, razor sharp bed lines, and disease-free turf are achieved through preventive maintenance.

Team meetings provide an opportunity for constant improvement and positive reinforcement. Annual maintenance contracts show a 90 percent renewal rate.

Smallwood's mission statement is to "provide superior environmental products and services." Growth and profitability are fueled by dedicated customer service. "The client also becomes a member of the team," says Smallwood; "the client has the same goals as we have."

Building a client network

Paul Drummond is Smallwood's director of business development.

He says the business development approach in South Florida involves more networking than anything else.

"It's going out after new business, meeting with new clients as well as servicing the existing client base," says Drummond, who regularly attends meetings of the Naples Econominc Development Council and Chamber of Commerce.

It's a time to "generate leads, talk to existing clients, ask them what else is going on."

Drummond says company designers have one-on-one contact with clients.

"I go with them (to a job site) to make sure the clients are satisfied, that control is being maintained, that we're servicing the client according to his needs."

—Terry McIver□

For Rapid Turf Recovery Apply Just

ONCE™ promotes rapid turf recovery because it makes nutrients available continuously —*every day*— in amounts needed by turf.

This speeds turf recovery and promotes better stress and disease resistance. Plus, you get more consistent mowing cuts (no flushes) and superior turf color and density.

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Because release is based *only* on temperature—not water, pH, or bacteria as with other fertilizers—nutrient availability matches turf and plant growth needs.

ONCE is available in two longevities (8-9 month, and 5-6 month for northern climates) and a variety of analyses. There is also a Potassium-specific formula for highly stressed areas.

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Use ONCE, just once, for the best results all season long.

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It only takes one insecticide to protect your customers from top to bottom. By using TEMPO® 2 Ornamental Insecticide, you can treat home lawns, flowers, plants, shrubs, even trees with unmatched effectiveness.

Reduce exposure. TEMPO uses 80% less active ingredient than the leading insecticide, so there's 80% less chemical to impact the environment. And that reduces the potential for exposure to your customers and their pets.

TEMPO reduces exposure to your customers, your employees and the environment.

Since TEMPO is a broad-spectrum, advanced generation pyrethroid, it gives excellent control at low dosage rates. This allows you to control tough surface-feeding pests like sod webworms, cutworms, armyworms, even ticks without yellowing the grass or interfering with fertilizers or fungicides.

A Little Tempo Will

On top of all that, TEMPO is practically odorless.

No phytotoxicity on ornamentals. Using TEMPO on all your customers' flowers, plants and shrubs is an excellent way to control leaf-feeding insects without burning the leaves or blooms.

Plus, the fast knockdown and long residual of TEMPO make it effective on tough pests like pine shoot moths, webworms and sawflies.

And again, 80% less chemical means less handling, mixing and disposal hassles, as well as less impact on the environment.

Less chemical needed to spray trees. Nothing is better on trees than TEMPO. Because not only are you spraying less

TEMPO effectively controls surface and leaf-feeding pests like tent caterpillars, Japanese beetles and bagworms.

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Cover The Whole Lot.

chemical into the air, TEMPO also costs less than other leading insecticides.

In addition, TEMPO is compatible with all types of spray equipment and won't cause downtime due to clogging.

And it's effective on such leaf-chewing and leaf-skeletonizing insects as gypsy moth larvae, oakworm caterpillars, leafrollers, bagworms and cankerworms.

With 80% less active ingredient, it only takes a little TEMPO to cover a lot of ground. And that has big advantages for you and your customers.

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Circle No. 134 on Reader Inquiry Card

WARM SEASON INSECT CONTROL

Warm southern temperatures and shifty weather patterns make insect control especially tricky. Pest problems vary in intensity from year to year.

by Patricia P. Cobb, Ph.D., Auburn University

Managing turfgrasses in the south is a great challenge. The wide variety of grasses now grown in the South brings into focus the diversity of associated pest problems.

The increase in insect problems, coupled with increased environmental concerns and costs of control strategies have caused southern turf managers to take a new look at all aspects of insect control.

Importance of cultural control

Total management schemes are nothing new. However, an awareness of how all aspects of growing and maintaining healthy turfgrass influence pest control strategies continues to increase. Insect control on turf in the South is a year round job. Although actual control efforts can extend from March through November in some areas, most southern turf managers consider insect control to be a part of a total management scheme for growing grass, one that goes on all year.

Each year brings with it a unique set of conditions that contribute to the development of turf pest problems.

Weather patterns this past season provided conditions which favored development of various pests. Abundant spring rains in the Southeast contributed to optimum requirements for two-lined spittlebug survival at this time. Damage on lawns in many areas was first reported in May rather than mid-June. Later, extreme drought conditions in these same areas discouraged spittlebug survival, but favored the buildup of fall armyworms and chinch bugs.

Fire ants establish colonies most frequently after spring and fall rains, and were numerous again last season during these times. During drier months last year, fire ants were sometimes found in equipment and structures. Fire ants infest the Southeast, but potentially can spread to areas along the Pacific coast.

Return of the webworm

The "usual" turf pests—grubs, mole crickets and fire ants—continue to be the "big three" in the Southeast. However, this past season was the second year tropical sod webworms were reported to be damaging turf in areas along the Gulf Coast westward into Louisiana.

These pests are typically found in central and south Florida and are resistant to most insecticides. They were controlled with formulations of *Bacillus thuringiensis* varieties such as Javelin WG.

Biological control agents continue to hold promise for controlling some pests. Insect-attacking nematodes and parasitic red-eyed flies have been released in Florida to help in the battle against mole crickets. Prior nematode releases resulted in mole cricket supression in test areas to the degree that mole crickets at those research sites were not a damaging problem. In addition, tests with parasitic nematodes for control of surface feeding caterpillars are under way. Also in Florida, a fungus—if application tech-

The TOP 10 Warm Season Insect Targets

Pest	Spring March-May	Summer June-August	Fall-early winter Sept.-Dec.
1 Mole crickets	Map areas of overwintered mole cricket activity for treatment of nymphs in May-July. Treatment of overwintered populations is optional in most areas, and does not replace treatment of nymphs. Tunneling can be reduced with Orthene sprays (3.5 lb. ai/acre). Keep grass roots in contact with the soil, fertilize, and water grass as recommended. Monitor areas mapped weekly with soap flushes to determine when hatching begins. If hatching occurs before June treat as recommended for summer.	Apply one of the following within six weeks after first observed hatch: Mocap (7.5-10 lb. ai/acre), Oftanol in areas where used no more than two years (2 lb. ai/acre), Triumph[2] (2 lb. ai/acre/season), Turcam (2 lb. ai/acre) or Sevimol (6-8 lb. ai/acre). Spot or area treat later in the summer with Orthene (2·6-3.5 lb. ai/acre) or Dursban bait (75-150 lb./acre).	Spot treat with Orthene of Dusban bait or Triumph (if not used earlier) as recommended for summer.
2 Grubs	Map areas of spring damage and monitor later in summer for reintestation control during late March-early April is "second-best" and does not extend to new generation grubs in late July-August.	Map grub infestations and treat these areas. Late July-August treatments may include Turcam (2-4 lb. ai/acre), diazinon[3] (4 lb. ai/acre), Triumph[2] (2 lb. ai/acre) or Mocap[1] (5 lb. ai/acre). Irrigate before treatment in hot, dry conditions.	Treatments are effective most years through Sept. Proxol (8 lb. ai/acre) or Triumph[2] (2 lb. ai/acre) are effective for late-season control. For green June beetle' registered formulations of carbaryl (Sevin, 2 lb. ai/acre) are effective.
3 Fire ants	Area treat April through May infested turf of an acre or more with a broadcast application of a fire ant bait: Amdro (1.5 lb. bait/acre); Affirm (1 lb. bait/acre); Logic (1-1.5 lb. bait/acre). Wait a week, mound treat visible mounds with a registered formulation of a contact insecticide such as diazinon[3], Dursban or Orthene.	Treat mounds as reinfestation occurs as recommended for spring.	Area and mound treat as described for spring in heavily-infested areas. Apply controls when worker ants are actively foraging. Irrigate before treatment if drought conditions exist.
4 Chinch bugs (Southern)	Replace susceptible turf with resistant or non-host varieties. Treat overwintered adults when they become active in March or nymphs in April-May with diazinon[3] (4 lb. ai/acre); Dursban (1 lb. ai/acre); Triumph (1 lb. ai/acre), Tempo 2[4] (.14 lb. ai/acre); or Oftanol (2 lb. ai/acre). Control thatch as recommended.	March-May treatments usually prevent summer damage. Wet springs may delay population buildup, and therefore treatment. Treatments delayed till summer are as recommended for spring. Damage limited to sunny areas.	Spring or summer treatments usually make late season applications unnecessary.
5 Two-lined spittlebugs	Monitor turf and landscape areas for nymphs. Infested turf is "squishy" when walked on. Some years nymphs are present in spittle masses in May. Control thatch as recommended.	Mow, irrigate several hours or the day before treatment. Diazinon[3] (4 lb. ai/acre); or Dursban in less thatchy turf (1 lb. ai/acre) are effective controls. Damage resembles chinch bug damage, but usually first appears in shady areas.	Treat reinfested areas in early September as recommended for summer. Further fall treatment is not required.
6 Sod webworms	Common sod webworms emerge as adults in most areas in April. Time treatments of infested turf two weeks after peak moth flight. Turf moderately damaged will usually grow out, and treatment can be delayed until the summer generation (S). Diazinon[3] (4 lb. ai/acre); Dursban (1 lb. ai/acre); Proxol (6 lb. ai/acre); Orthene (1/3 lb. ai/acre); Tempo 2[4] (.09 lb. ai/acre); or b.t. formulations may be used when larvae are present.	Treat when larvae are present or as described for spring. Tropical sod webworms should be controlled as young larvae with b.t. formulations such as Javelin WG.	Treatment in early September in more southerly areas may reduce overwintering populations.
7 Cutworms	Treatment is not usually necessary until late March or April. Apply insecticide late afternoon and irrigate as label requires. Treatments include Dursban (1 lb. ai/acre); Proxol (6-8 lb. ai/acre); and Sevin (2-4 lb. ai/acre).	In the South, cutworms are usually a spring (and sometimes fall) problem. If summer infestations occur, treat as recommended for spring.	Treat as recommended for spring.
8 Billbugs	Treatment of adults can be done when they become active. These include diazinon[3] (4 lb. ai/acre), Dursban (1 lb. ai/acre), Oftanol (2 lb. ai/acre), or Triumph[2] (1 lb ai/acre).	Treat billbug grubs with grub rates of Turcam or Triumph (if not used earlier), or diazinon[3].	Billbug infestations discovered now are more difficult to control.
9 Fall armyworms	Treatment not needed at this time.	Populations usually develop during July-September. Treatments are most effective in early morning or late afternoon. Use Dursban (1 lb. ai/acre); diazinon[3] (4 lb. ai/acre); Proxol (6-8 lb. ai/acre); or Tempo 2[4] (.09 lb. ai/acre).	Apply as directed for summer. Fall armyworms are usually a greater problem in September.
10 Ground pearls	Fertilize, dethatch, lime, etc. as recommended. No insectcide has been found to be effective.	Avoid drought stress, disease and other pressure. No insecticide has been found to be effective.	Avoid drought or other stress.

[1] Golf courses and sod farms. [2] See soil restrictions; use only 2 lb ai/acre/season. [3] Not for use on golf courses or sod farms. [4] Home lawns only.

The two-lined spittlebug may become established deep within the turf during May.

Cultural strategies

Equipment repair, records and inventory review, and continuing educational opportunities for staff during winter months are all important aspects of pest management.

Mapping areas of pest activity may narrow both treatment area and amount of pesticide.

A knowledge of pest history at a site and knowledge of potential insect pests specific to location are important only in the context of frequent inspection of the turf. Proper fertilization, mowing and water usage promote healthy turf which can recover quicker from pest damage. Thatch management may discourage development of some pests or enhance pesticide performance when properly timed treatments are necessary.

Watch pH breakdown

The pH of the spray water may influence the effectiveness of insecticide spray applications. Some insecticides break down in high pH water. Trichlorfon (Proxol), acephate (Orthene), and isazophos (Triumph, 9 or above) are some examples. Chlorpyrifos (Dursban) generally does not. Usually, the more water-soluable materials are more susceptible to breakdown at high pH. Pretreatment irrigation may make the difference between success and failure during dry, hot periods. Pretreatment watering does not replace watering after insecticides are applied. Rather, pretreatment watering moves soil pests closer to the surface because they are more active in moisture than dry soil. This makes contact with the insecticide or survival of biological control agents more a possibility.

No endorsement or exclusion of registered products is intended.

—*Dr. Cobb*□

niques can be developed—may be useful in combating fire ants.

Biological reminders

What has been learned from the use of "milky spore" for Japanese beetle and nematodes for mole cricket control can serve as reminders:

1. Susceptible pests must be present in great enough numbers for biological control agents to become established.

2. Environmental requirements (moisture, temperature, etc.) for establishment of pathogens must be met.

3. Control may be slow and result in supression rather than elimination of the pests. Supression is a more long term solution, however, if situations such as pest resistance are to be avoided.

New insecticides

Insecticides are important components of southern turf pest management strategies. A few additions provide new choices for turf managers. Crusade 5G (fonofos) will be marketed on a limited basis this year for soil insect control. Mocap 5G has been discontinued and a new formulation (different granule) of Mocap 10G will be available for golf courses and sod farms. Orthene Turf, Tree and Ornamental Spray has a label expansion which includes chinch bugs. Tempo 2 has effectively controlled surface feeders on home lawns.

New delivery systems

New methods for delivering insecticides more precisely to pests are of particular interest. New technology continues to focus on subsurface insecticides for grub and mole cricket control.

"Precision placement," as termed by one turf scientist, includes high pressure injection of liquids, and more recently subsurface application of granular formulations. Both systems have the advantage of placing insecticides directly into the zone of pest activity. There is less surface residue, therefore less ULV breakdown. Drift is essentially eliminated, and reduced rates of effective insecticides provide control equivalent to full rates of these same conpounds surface-applied.

There are still questions to be answered about both systems: Which insecticides are most effective? What are critical soil moisture and irrigation levels? How do these techniques affect the "window" for optimum application timing?

The potential for environmental and personal safety with such systems are major reasons why this concept will continue to be an active area of application technology research.

Locale and turf considerations

What your most important turf insect pest is depends on where you are located and what grasses you manage. Mole crickets are considered primary pests in Florida, south Georgia and other southeastern areas. Grubs and fire ants are of great importance in Texas; chinch bugs in Louisiana; grubs in California.

In addition, how and when you control insect pests will also vary regionally. Do not expect insecticidal, biological or cultural efforts to work well in controlling insect pests if not timed properly. Find out from extension and research scientists in your area what are proper timings for control of specific pests in your area. Control strategies also depend upon clientele acceptance of damage levels, scheduled events, and maintenance practices. **LM**

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- *Floating decks have wide reinforcing bar on deck perimeter for strength and to prevent turf gouging.*
- *48" deck model has a center anti-scalp roller and skids for added turf protection.*

Smooth out your tough jobs with the new 36" and 48" Crew Kings.

For a better quality cut, a floating deck is suspended from the carrier frame, allowing the Crew King to follow ground contours closely and prevent scalping and blade damage.

For better productivity, the new Crew Kings are packed with time-saving features. Quick change cutting height adjustment requires little effort and no tools. Just pull a few pins, set the cutting height and continue.

Five forward speeds accommodate a wide variety of mowing conditions. Reverse gear makes access to tight areas easier, including trailer unloading. And a zero turning radius at the wheel provides excellent maneuverability without scuffing turf.

Crew Kings also have proven-tough Jacobsen decks, built to take the hard knocks of everyday work.

The new Jacobsen Crew Kings help turn any day into a walk in the park.

See your Jacobsen Commercial Products dealer today for a demonstration.

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J-10-0

Dependable, economical post-emerge control

Crabgrass & Nutsedge

Plus the broadleaves in ornamental turf

Take advantage of our special get-acquainted offer to find out for yourself why Trimec® Plus is the fastest growing new product in professional turf management... You're in for a pleasant surprise.

Everett Mealman, President
PBI/Gordon Corporation

Yellow nutsedge can be devastating if it gets out of hand because of the way it spreads from its roots. Just ask Lentz Wheeler, superintendent of the Hidden Creek Country Club in Reston, Virginia, which is recognized as one of the better maintained courses in the Washington D.C. area.

"We had two years of drought," says Wheeler, "followed by a year of excessive rain, and it brought on an undesirable infestation of yellow nutsedge" — totally unacceptable for a course like Hidden Creek.

Wheeler goes on to say that he tried several post-emerge herbicides but, in his words, "the main thing we got from them was a lot of phyto, which I wish had been on the nutsedge rather than on our fairway grass.

"Trimec Plus turned out to be the product that came to our rescue. One treatment with Trimec Plus," says Wheeler, "gave us back the type of fairways we could be proud of."

Lentz Wheeler, superintendent of Hidden Creek Country Club in Reston, Virginia, savors his handiwork on an immaculate fairway that once was plagued with yellow nutsedge. Wheeler says that Trimec Plus did a thorough job of cleaning out the nutsedge, and the cost was surprisingly low. Wheeler was equally impressed by the fact that Trimec Plus also did an excellent job on the few tough broadleaves that were present.

So Trimec Plus gets yellow nutsedge, and it is economical. But how about crabgrass?

"If you want to talk about crabgrass, talk to us," say Ted Davenport and Gerald Krohn, of Bay Landscaping, Inc., Essexville, Michigan (Saginaw, Midland, Bay City).

To fully appreciate what they have to say about Trimec Plus and crabgrass, you need to know that the residential division of Bay Landscaping mainly services upscale homes, most of which they originally landscaped. They have their own pride in those lawns, and they can't abide even the slightest blemish.

"We nearly always have excessive spring moisture," says Davenport. "It tends to leach out the pre-emerge and when the hot weather hits, so does the crabgrass, right along with the summer annual broadleaves. To be on the safe side, our program consists of a broadcast treatment of Trimec Plus for the second and third applications.

"This will be our fourth year with Trimec Plus," continues Krohn, "so you know what we think of it . . . It does a beautiful job of controlling crabgrass and other course grasses, along with every conceivable type of broadleaf."

So Trimec Plus gets yellow nutsedge; it gets crabgrass; it gets broadleaves; it's economical. But how fast does it work?

Ted Davenport, left, lawn care applicator of Bay Landscaping, Essexville, Michigan, and Gerald Krohn, in charge of lawn service. They always carry an SP1E Back Pack Sprayer loaded with Trimec Plus. They have found that the SP1E and Trimec Plus are the ideal combination for spot weeding. Not only does Trimec Plus get grassy weeds and nutsedge, but broadleaves as well. The SP1E Back Pack Sprayer is a $100.00 value, but you can receive one for only $49.95 when you buy Trimec Plus.

Reed Hull, left, president of Vita Lawn Corp., Rancho Cordova, California, and Bradley Belcher, general manager, say that Trimec Plus often knocks out crabgrass in one application without any phyto or discoloration to their Bermudagrass turf. Before the advent of Trimec Plus, Vita Lawn used 6-lb. MSMA, which usually required three or even four treatments to get crabgrass without phyto. They are also very pleasantly surprised by the control of dallisgrass they are getting with Trimec Plus.

You want fast results — you want to talk to Reed Hull and Bradley Belcher of Vita Lawn Corp., located in the Rancho Cordova surburb of Sacramento.

Vita Lawn is a very highly regarded lawn service company, and when the crabgrass hits in Sacramento, Vita Lawn's phone rings off the wall with homeowners who want to become new customers . . . right now!

"We've traditionally sold these new customers a three-application rescue program for their grassy weeds," says general manager Belcher. "In the past, using 6-lb. MSMA, we had to spread it out over three treatments or more to get the crabgrass without phyto. Trimec Plus often will do the job with just one application and, if we're back two or three times, it is usually because we're after dallisgrass."

What is Trimec Plus?

Trimec Plus is a Complex that was designed by PBI/Gordon research to solve the problem of grassy weeds like crabgrass, dallisgrass and barnyardgrass, as well as nutsedge, in ornamental turf.

In terms of cost and effectiveness, MSMA used to be the herbicide for nutsedge and grassy weeds . . . but it has a major flaw when used in ornamental turf. To get enough of it into grassy weeds requires rates of application that can result in burning and discoloration of the turf.

When MSMA is locked into a Complex with Trimec, you have the ultimate post-emergence herbicide for ornamental turf . . . excellent control of grassy and broadleaf weeds, plus yellow nutsedge, plus maximum safety to Kentucky bluegrass and Bermudagrass. Plus unmatched economy.

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Circle No. 139 on Reader Inquiry Card

ANSWER THE CALL TO SAFETY

Be accident-free this season. Take the advise of these industry safety experts, and practice what they preach.

by Jack Simonds, contributing editor

Manufacturing company executives often post the safety records of employees near the paths the rank and file take to get to their offices. It is a time-tested way of often calling attention to the number of days without a time-loss injury.

The call-to-safety and its importance to bigger companies is self-evident. Injuries cost time, productivity and insurance entanglements. The common denominators: needless injuries and avoidable losses.

The green industry, measured by smaller work crews dispatched from more modest headquarters, must also turn an active eye toward worker safety. Dangers lurk, but safety can prevail when common sense steps are taken.

The 'smart employee'

Consider the methods Bill Tidwell uses in approaching safety with work crews in Orange County, Calif.

Tidwell, a supervisor in field operations for the county's Environmental Management Agency is directly responsible for maintaining the county's public green areas using 56 regular employees and 50 to 70 inmates from the county jail system for tree trimming, ground clearing, weed control and other tasks.

"The best safety device is a smart employee," says Tidwell. "Safety equipment is only effective if you put it on and you keep it on."

California, which imposes strong licensing standards for workers in the green industry, requires certification for pesticide users, entailing a 20-hour course study and additional 20-hour continuing education coursework every other year.

Those courses, coming from California's OSHA, are augmented with another safety step Tidwell particularly favors.

"It is called a tailgate meeting," explains Tidwell. Under the plan, line workers meet in open-ended discussion every 10 days to discuss safety issues and incidents which actually occurred in the field.

"I like those sessions. We often talk about what went wrong, how someone got into a situation and how to avoid it in the future," says Tidwell.

Injuries are reduced

Tailgate meetings, he believes, pay in dividends which aren't immediately

Bill Tidwell's spray crew meets every 10 days to talk safety.

Tidwell: "The best safety devise is a smart employee."

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shown, but can be tracked. He says crew workers also discuss safety equipment—eye protection, special clothing and other gear—which is used in the real work-a-day world.

"Our crews have the safety equipment they're supposed to have. I go out to job sites to see for myself that they're using the equipment. I make sure that happens," Tidwell says.

"We have seen a marked decrease in two years in the number of employees who are injured in a long-term way. We've reduced (those injuries) immensely."

The department, for instance, has not seen a chain saw-related accident in three years.

Tidwell notes however, that safety clothing worn during spraying season holds special challenges for the wearer.

Hot Southern California days, Tidwell says, make it tough for crews to strictly maintain wearing the coveralls.

Other safety gear has improved over the years, Tidwell says. He particularly notes a new hard hat design which stays on the head in a variety of positions, is equipped with lightweight ear protectors and face visor and, most importantly, is favored by line workers because of its ease-of-wear.

Also, Tidwell has equipped his staff with an ankle-high boot with built-in insole that line workers have found comfortable for an entire eight-hour shift.

Company standards higher

As Tidwell contends daily with safety challenges, Ed Neufer, president of Safety Equipment and Supply Co. of Fort Wayne, Ind. sees the advances of gear and clothing and tries to keep pace with what green industry workers want and what works in the field.

Neufer says that in some cases, the industry "has not matured" in its worker protection for employees in daily contact with pesticides. At the same time, bigger lawn care operators and maintenance companies are making great strides to insure worker safety.

Neufer says all gloves and boots today should be made of a nitrile or neoprene compounds, material that can be molded into gear that looks and works like common rubbers, but has stronger resistance powers against skin exposure to chemicals.

The worst footwear—and at times the most common—Neufer says, are tennis shoes and leather boots. Definite industry no-nos; Neufer says chemicals can absorb into both materials, and, even with routine washing, build up over time. The footwear can retain harmful portions of a variety of chemicals used in the industry.

Operating guidelines

During spraying, Neufer echoes Tidwell's standards for turn-out gear: respirators, goggles and a hard hat equipped with a face shield. Clothing, particularly cotton, should be washed daily.

But Neufer sees hope in a Du Pont Co. spun and woven material marketed as Tyvek; particularly when mixing, loading or spraying chemicals.

Tyvek and other gear have disadvantages, too, Neufer says. The fabric does not "breathe" particularly well, making workers hot. Also, the gear, coupled with a respirator and eye goggles, can sometimes have a chilling effect on a homeowner.

"Somewhere, there has to be a happy medium," says Neufer.

continued on page 52

Stock up on safety info

Perhaps the basics bear repeating as, for much of the country, the landscape and lawn care industries gear up for full springtime workloads.

From the Outdoor Power Equipment Institute (OPEI) comes an updated pamphlet entitled "Outdoor Safety Tips," timed with the month for increased on-the-job safety awareness.

Basic tips from the OPEI include:

- Knowledge of the controls, capacities and purposes of power equipment. The OPEI recommends reading the operation manual fully before using new gear.
- Proper dress for the job. Long, close-fitting clothes, sturdy shoes and other protections like safety glass. Other special clothing and protective wear are called for in special situations.
- Safe handling of gasoline. Fill the tank before starting small engines. Also, wipe up spills immediately. Store petroleum products only in approved containers and away from the house. Never smoke around gasoline.
- Clean up the work area beforehand of such potential projectiles as golf balls, rocks and other small items which might be hurled from mowing machinery. Pets and children should be kept away during mowing.
- Follow manufacturers' written procedures. Along with operating procedures, OPEI, along with all manufacturers, strongly recommend keeping up with maintenance. When unclogging, OPEI reminds workers to turn off the engine completely and take the extra insurance step of disconnecting the spark plug line. Keep hands and feet clear of moving parts and do not remove safety devices or safety labels.

For a copy of this safety guide, write to OPEI at 24500 Center Ridge Rd., Suite 250, Westlake, Ohio 44145. The institute also produces safety news, films, checklists, brochures and public service announcements.

Industry insiders, like Joe McDonald, a marketing coordinator at John Deere Co., highlight the importance of maintenance and encourage crew leaders to daily look over equipment, eyeing oil or greasing needs, odd vibrations, noises, excess smoke and other hints.

Paul Loomans, a marketing coordinator at Deere, agrees: "Preventive maintenance is a most important practice (which) can help stop field failure," says Loomans. Quick fixes in the field, he says, "present the greatest opportunity for accidents to happen."

Quick fixes often come as the operator is working under fatigue and using makeshift tools.

Deere, like other manufacturers, installs deadman controls on its walk-behind models, and for mid-size riders (14 hp and up) the company has gone to a two-pedal control system for forward and reverse. Engaging the rider requires a distinctive foot motion which McDonald claims makes the vehicle easier to control in panic situations.

—Jack Simonds□

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Circle No. 297 on Reader Inquiry Card

Other equipment on Neufer's list: outdoor safety storage sheds for chemicals, wheel chocks on all vehicles to deter accidental truck roll, and emergency spill kits aboard all vehicles and at home base.

Spills: what to do

Spills present a unique set of problems which require the right set of reactions. But as in most emergencies, common sense is the first order of business.

Consider, says Ohio EPA spokesman Jim Leach, the severity of the spill first.

In minor mishaps, the crew can perform quick mop-ups. But most spills should first be reported to the local fire department, as many local forces are trained in assessing spill severity.

In Ohio, says Leach, local emergency planning commissions may also react to larger spills. In some instances the state agriculture department has been empowered to advise and react to spills, along with the natural resources department.

These cases hold true when the mishap has occurred near a waterway. EPA agencies also have assessors who can assist in a range of responses.

Neufer: Industry is maturing, becoming more safety conscious.

From the perspective of Tom Delaney, director of government affairs for the Professional Lawn Care Association of America (PLCAA), the industry is "not doing all that well" in policing itself on safe driving habits and hazardous materials handling.

Generally, Delaney says, employee driving records should be collected for those who will be transporting potentially hazardous substances. Now, those driving histories are mandated and overseen by the federal Department of Transportation. Delaney says the controlling agency varies from state to state.

Specialized training for driving bigger pesticide and herbicide trucks is available; particularly in turning the vehicles in urban areas.

The PLCAA, for instance, offers for $25 an audio and workbook course entitled "Spill Buster." Details are available by calling the association at 800-458-3456.

But with a PLCAA membership of 800 and with an estimated 5,000 landscapers nationwide, there seems little in the way of a central clearinghouse for safety practices.

"I don't think there is enough (advance) preparation by many companies," says Delaney.

"Companies don't often deal with things until they become a problem." He adds that some larger, national lawn care companies offer strong safety programs not only for their employees, but for others in related fields.

These questions surface as the EPA itself appears to be preparing new worker protection standards for farm and lawn care workers. **LM**

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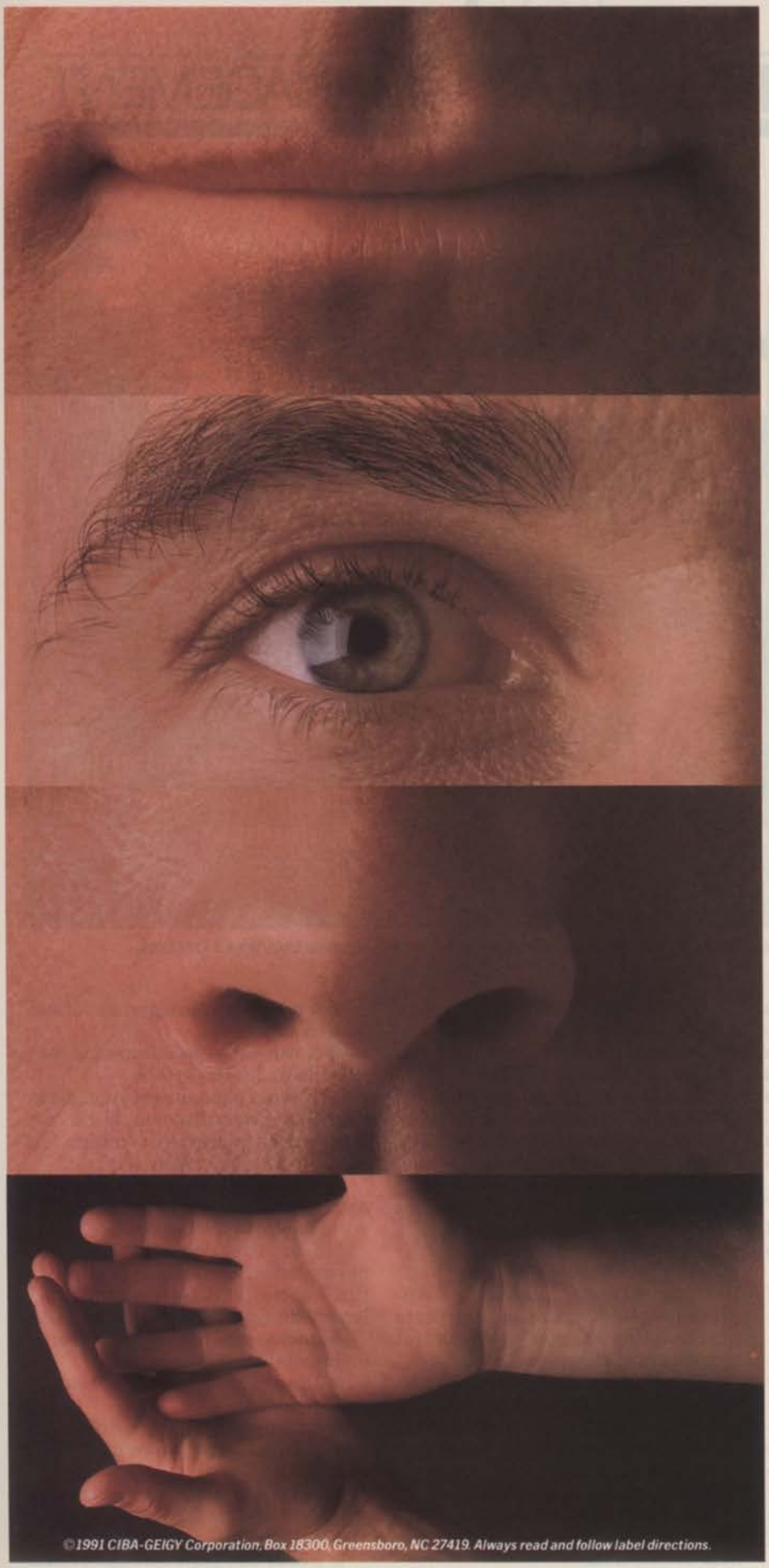

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WEED CONTROL IN ORNAMENTALS

Many methods—from hand-weeding to herbicide use—are available to control weeds in shrubs and flower beds. But a combination of methods is best, according to this extension weed scientist.

by Jerry Roche, editor-in-chief

Landscape fabric installed beneath mulch is often used an effective method of ornamental weed control.

Sometimes, the only way you can maintain attractive ornamental beds in the landscape is by getting out there on your hands and knees and hand-weeding. But that is not the only answer, according to Dr. Jeffrey F. Derr of Virginia's Hampton Roads Agricultural Experiment Station.

"I'm a big proponent of mulching," says Derr, who spoke on the subject at the Virginia Turfgrass Conference earlier this spring.

"Hand-weeding is quite a bit of work that mulching can help alleviate."

Derr says that mulch in ornamental beds should be about two to four inches deep. "Too much could mean root rot due to excess moisture retention. Too little will allow the weeds to establish," he notes. "You should also be sure the mulch isn't infested with weed seed, and may see better weed control with mulches containing larger particle sizes."

Hand-weeding and mulching, of course, are just two of many ways to keep weeds out of ornamental beds. The others, according to Derr:

- using black plastic (polythylene) layers over the soil base;
- using geotextiles (polypropylene and polyester) over the soil;
- applications of herbicides; and
- combinations of the above techniques.

Plastic, fabrics

Derr and his wife Bonnie Lee Appleton have numerous test plots incorporating various weed control techniques at Hampton Roads.

"Geotextiles work better than black plastic," Derr says. Geotextiles are being studied as replacements for black plastic because the latter has the following problems:

- it has a non-porous composition;
- it lacks material strength;
- it has a slick surface that does not hold mulch well;
- it can cause development of surface roots; and
- it can cause build-up of carbon dioxide under its surface.

"To avoid photodegradation, however, the geotextiles should be covered with an inch or two of mulch," he adds.

Landscape fabrics—either woven or spunbound—are being tested for weed control at Hampton Roads.

"In our experience, black fabrics have worked better than white fabrics," notes Derr. He says the problems with fabrics, however, include:

- intense site preparation prior to their installation;
- they won't control perennial weeds;
- because certain materials are lighter, installation can be more difficult;
- although it varies by material, photodegradation does occur to some extent;
- weeds can grow through or into

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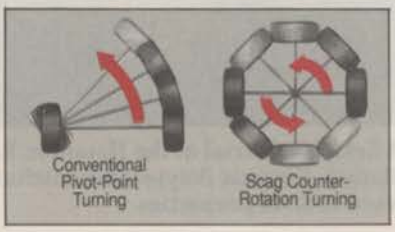

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Jeff Derr: More research needed on post-emergence herbicide use in wildflowers.

A field fabric trial at the Hampton Roads Agricultural Experiment Station, Virginia Polytechnic Institute and State University, tests fabric weed control properties.

fabrics, especially less dense materials ("Weeds seem to be able to find seams, too," Derr notes); and

- fabrics cost more than other methods of weed control.

"Fabrics have some uses, but managing the mulch layer is important with the fabrics because they generally allow root penetration by weeds.

"Where we see a potential problem," he continues, "is in landscapes that are periodically re-worked or replanted, where sections of fabric might need to be lifted and/or removed and there has been ornamental root development into and through the fabric. This could severely damage portions of landscape plant root systems if this phenomena proves common."

Derr is pleased with the weed control offered by combining mulch with geotextiles. If you are using this method, here are helpful hints:

- Use shallow mulch layers—one inch is best.
- Keep the geotextiles totally covered.
- Remove and/or kill weeds when they are small.
- Consider using a pre-emergence herbicide atop the geotextile.
- Consider using more inorganic mulches.

Chemical control

"Anything with 2,4-D in it is damaging to most ornamentals," Derr notes.

For weed control in annual and perennial flower beds, Derr says Dacthal and Treflan are available as pre-emergents; and Acclaim, Ornamec (Fusilade) and Poast as post-emergents.

"We don't have any materials for broad-leaves, though," he says. "We have to fall back to hand-weeding."

Derr says that, in all cases, herbicide labels should be consulted to determine which plant materials they can be used on.

Products like Devrinol, Surflan, Pennant, Casoron, Ronstar and Gallery are available as pre-emergents for woody ornamentals. Rout, Ornamental Herbicide 2 (OH2) and Snapshot (a Gallery/Surflan combination) are available herbicide combinations for woody ornamentals. For post-emergence control of grasses in woody ornamentals, Acclaim, Poast and Ornamec can be used. Basagran is labeled for yellow nutsedge control, and Roundup is a non-selective herbicide for woody ornamentals.

Control of the true grasses—johnsongrass, crabgrass, bermudagrass (wiregrass)—can be obtained with Acclaim, Poast and Ornamec, but they will not control wild onion, nutsedge or any broadleaf weed, Derr notes.

"Under high-temperature conditions, you might want to use a nonionic surfactant instead of a crop oil concentrate with certain post-emergence herbicides," Derr says. "Also, under those conditions, you might want to hold off over-the-top applications."

Herbicides that can be used for special weed problems in woody ornamentals:

yellow nutsedge: Pennant, Basagran, Roundup

mugwort: Casoron, Roundup

wild onion, wild garlic: Roundup

bamboo: Roundup

bermudagrass: Ornamec, Poast, Roundup

"I lean toward wiping on the herbicide if there is a height differential between the weeds and ornamentals," Derr adds. "Try to get some Roundup to stick to the weed's leaves."

Weeds in wildflower plots are also sometimes problems. Derr says:

"We think some of the post-emergence grass herbicides have a place in weed control in wildflowers, but we've got a lot more work to do in that area."

For additional information on weed control in ornamentals, contact Derr and Appleton through the Virginia Cooperative Extension Service. Write them at: Hampton Roads Agricultural Experiment Station, 1444 Diamond Springs Rd., Virginia Beach, VA 23455. **LM**

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Source: Dr. Jeffrey F. Derr

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THE ULTIMATE CHALLENGE

What to do with company management personnel when you're in a downturn and have to revert to a 'survival mode.'

by Rudd McGary, Ph.D., AGMA Inc.

When times get tight, companies often reduce personnel to help them survive. Almost always included is some sort of reduction in management. While this makes sense from several viewpoints, there are also reasons why you should take a long look at what and whom you cut from management.

You remember the good old days, don't you? Those days when you only had three other people working with you and you knew everything that was going on? You did the work, you invoiced the customer, you collected, you marketed; you know—the good old days.

Then, because you were so good at what you did, the company started to grow. Remember when you went through the year trying to manage 11 people by yourself? You waited until the off-season, then you said, "I need to get a manager!"

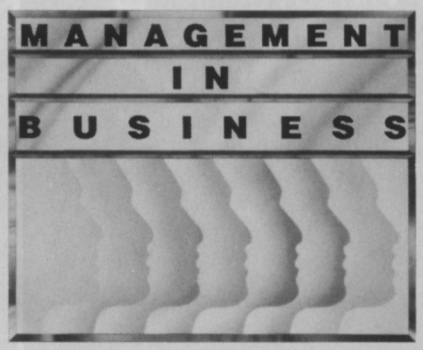
So you hired a "right-hand-man." If you were lucky, you found someone who thought along your lines, who also had other talents. If you were unlucky, you found someone who didn't fit your ideal for this management job. If you were really unlucky, you went through several people before you finally found the right person.

Now you had a company that grew to 80 employees in 10 years. You also noticed that 80 people are not 80 times as efficient as you. That—in fact—some people weren't exactly doing everything they could. But you were making money, so lots of little sins were slipping by as the company grew.

Let's get small

Then the downturn hit. In fact, it hit a year ago and people were let go at the end of the year. Then you looked at your management group and realized that you had way too many people on the administrative payroll for the size you predicted for this year. So cuts began there, too.

Here are some of the questions you ought to ask as you go through a



downsizing. The basic problem is that most management texts and courses don't worry about how to get smaller, they worry about how to get larger. Let's get small.

The basic differences between supervision and management, and one that needs to be highlighted if you are cutting back on personnel, is that the supervisor sees to the daily tasks of subordinates while the manager looks at, and plans for, a longer time period. The need for management lies in having people who can control company functions over a long period of time and give employees the information and tools they need.

Don't get lost in just doing tasks and working long hours to save the company.

Who to manage?

The pattern in many privately-held companies (like those in the green industry) is for the owner to get away from the day-to-day operations as the company grows. After building a company to a certain size, and because of the stress of doing so, owners often try to pass off the day-to-day operations to others. This can have excellent results, but often times the personality of the owner is needed for efficiency's sake.

If the owner/president has been around the operations, and not passive, then it is a good idea to make sure that the top manager is heavily involved when times are lean. Absentee ownership will almost always cause severe problems at such times. Too many questions come up that need to be addressed by someone who can see the entire picture, and usually that is the owner/president.

Remember that this doesn't apply if the company's owners are either public or the owner hasn't been working in the company for some time. In either of these cases, it's best to let the professional managers manage and for owners to keep out of the way.

What you should manage

In the past several articles, we have talked about areas of financial control, operations and marketing that need to be managed in times of survival. Clearly, each area is important. But on a more basic level, managers manage people, money, information and all other assets of the company.

One of the things you must determine is if the type of information you are getting is useful. More importantly, you must make sure to get all the information you need. There is no good reason to get longer and longer computer reports when times are tough. This is the time when you need your vital information on one sheet of paper, reduced to very simple terms.

If your MIS doesn't give you information you can act on, this is the time to make it more efficient. Without good, clear information, you can't manage.

In a survival mode, the company often asks people to return to old jobs as subordinates. This may mean that some people are back to physical work which they haven't done for some time, or that they are now out of the office more than they were in the past. You need to help these people

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make the adjustment to their "new" positions in several ways:

1. Make sure that the key functions are still in place. For instance, you might take on the function of inventory control to allow a manager to sell or work with the crews. But no matter what, someone has to run the inventory.

This may mean that you will have to be doing tasks that others were doing in the past. This is survival time.

2. Be a positive motivator. When times are tough, the top manager has to be positive and helpful. This is extremely hard to do, but the good managers are able to do so. The entire organization takes on the personality of the top manager. If you are positive and upbeat, it is likely that your organization will be also. The opposite is also true.

3. Make sure that all people have a basic understanding of what is expected. In a downturn time, you need to plan more.

You're also going to try to do the same jobs without having the same amount of people, and that means that you're going to have to be more efficient.

Simply working people harder isn't the key. Managing better is, and that means that you need to make clear to everyone what is expected. Most people in the organization will rally to help if they know what to do.

Don't get lost in just doing tasks and working long hours to save the company. Work on being a good manager as hard as you do anything else for the company. You'll find that the people around you will be likely to respond well.

Asking everybody to work harder won't make the company survive. Telling them what they can do to help will.

Control, plan ahead

The management side of a company often gets lost in a survival mode. Managers become task-oriented and return to patterns that were used in the past. Good managers will recognize that certain functions need to continue and that control and planning are the keys.

The cliche, "work smarter, not harder" becomes a truism in a survival mode. The task of management is to understand what the company needs and to get it to the right people and places on time. Easier said than done, but still possible. And for good managers, the ultimate challenge. **LM**

Rudd McGary, Ph.D., is a senior consultant with All-Green Management Associates in Columbus, Ohio

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Circle No. 101 on Reader Inquiry Card

WHAT'S GOOD FOR THE SYSTEM?

...As in irrigation system. Water management is more sophisticated. Money and water savings can be yours with troubleshooting, auditing and monitors.

by Jack Simonds, contributing editor

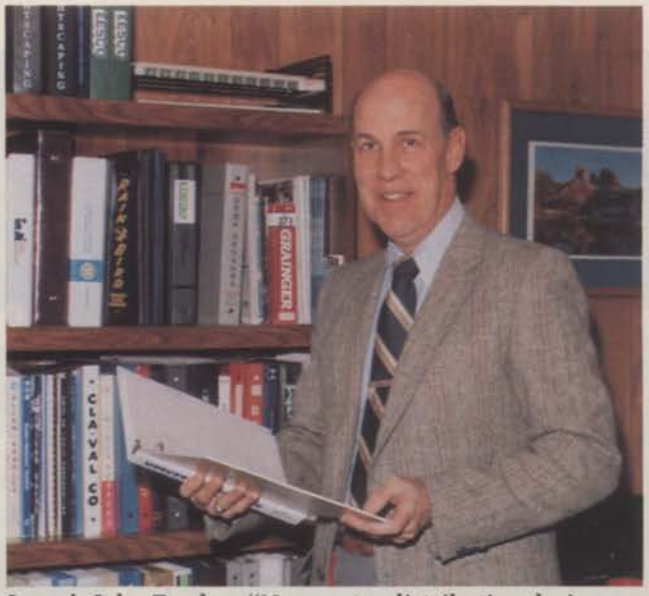
An irrigation system serves its purpose when the results are seen and the system's not heard.

When problems arise, grounds superintendents find themselves on the business end of troubleshooting.

As a green industry "major appliance," underground irrigation systems are only as good as their last season of service; and no one knows this bettter than irrigation designers and installers.

Water management is taking a front-and-center position in the 1990s, believes John Elliot of Irrigation Technologies in Temecula, Calif.

Irrigation Technologies, which concentrates on corporate landscaping irrigation, can analyze watering systems for weaknesses such as uneven water distribution because of improper head spacing, broken heads and underground water line breaks.



Lesco's John Dunlap: "New water distribution designs require less water pressure and electricity."

Is an audit an answer?

"Water management" is an industry buzzword. The term takes in irrigation design, water scheduling and systems maintenance. A system analysis, or audit, is the first action one should take if a problem is suspected, Elliot maintains. Other firms around the U.S. agree.

Emerging from such an analysis can be one of those good news/bad news set-ups; but the punchline may not get a laugh. The good news might be that a thorough systems check finds a simple mechanical problem which can be overcome by replacing a widget. Life goes on and all is well with the world.

The bad news? The original irrigation system has significant design problems. Corrections will carry a heavier price tag.

> *'Our opinion is that people over-water by 100 percent.'*
>
> *—John Elliot*
> *Irrigation Technologies*
> *Temecula, Calif.*

"If you've got wet spots, dry spots, brown-outs, water bills that seem exceedingly high, you've got a real problem," Elliot says. "Audits like the ones we do are not real expensive and they can tell you where your problems are."

Using catch-can and other monitoring techniques, Irrigation Technologies auditors are able to determine the effectiveness of a system. Elliot says soil types and the kinds of plantings being watered also factor into the equation.

Sensors reduce waste

Regardless, Elliot has found one recurring error:

"Our opinion is that most people over-water by 100 percent or more."

Elliot's firm, like others in varying degrees of endorsement, recommends rain sensors. A $20 investment, he says, can go a long way, if the device is installed and used correctly. But the science can be a sensitive topic within the industry.

"We recommend rain sensors," says Elliot, adding Irrigation Technologies is now in the process of testing different models.

"Trying to guess where to put them is a really sensitive subject. With rain sensors, you get credit for rain; the system shuts down automatically," Elliot offers; adding this caveat: "It gets very complicated very quickly."

Add, too, irrigation scheduling, which is dependent on the "W" word: weather.

Trouble down below

John Dunlap, an irrigation specialist with Lesco, Inc. in Rocky River, Ohio, says common telltale signs—surface puddles and extraordinarily high water bills—usually mean the underground piping system is deteriorating.

"If water coverage is inadequate during long dry spells," advises Dunlap, "changes and upgradings in systems are likely needed. New sprinker designs and layout configurations giving maximum coverage are now available."

continued on page 66

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Circle No. 111 on Reader Inquiry Card

All systems go

- If you suspect you're wasting water, have a water audit done ASAP.
- Wet spots, dry spots, brown-outs and astronomical water bills mean something's up down under.
- If water coverage is inadequate during long dry spells, changes and upgrades are likely needed.
- New sprinkler designs and configurations give maximum coverage using less electricity.
- Weather stations and moisture sensors can be retrofitted to older, still-servicable irrigation systems. □

IRRIG. *from page 64*

With new distribution designs requiring less water pressure, golf course superintendents and other landscape managers can look forward to significant electricity savings from the pumping station as well.

Newer head designs, grouped in clusters and emphasizing energy efficiency, may also help ease the cost of upgrading, industry specialists agree.

New, energy efficient head designs may ease the cost of irrigation system upgrades

With an average golf course irrigation system running from $300,000 and up and a typical 7,000 square foot residential system hovering between $2,000 and $3,000, design and installation costs weigh heavily on the man holding the purse strings.

"All of those (factors) can be major considerations," says Dunlap, adding that computer controls and local weather stations and moisture sensors, where applicable, can only assist in maintenance ease.

Keep play going

And what of making repairs or installations during the season?

Dunlap has seen two plans work: "either close the hole to play (with golfers taking a score based on par and handicap) or work around golfers by having repair crews effect repairs, stopping as foursomes pass through."

Dunlap says Lesco has offered training sessions for crews to efficiently work even as golfers play through a hole under repair. The trick is to be as unobtrusive as possible, and such plans of attack can only be used when conditions for the job permit.

Weather stations for golf

Rick Robbies, an Englewood, Colo. landscape irrigation designer and installer, also the uses rain or moisture sensors on some contracts, but generally doesn't include them on golf course irrigation plans.

"You'd have to have so many out there on the course to do an effective job," Robbies maintains.

"They (moisture sensors) work well in a commercial setting where you have the same contours and conditions," Robbies says. He prefers weather stations and computerized watering controls, particularly when building a new system.

Too many moisture sensors would be needed on courses where terrain varies from shady to sunny, grassy to sandy, he says.

Robbies, who says 80 percent of his business is in golf course irrigation design or troubleshooting, points to some general guidelines course superintendents may use to find out if it's time to call in a systems analyst.

"The first thing to do is keep a record on the number of man-hours spent on repairs. How much time is spent dragging hoses around to dry spots?" he says. If these and other operating costs recur—particularly curiously high water bills—upgrading and renovating is in order.

His analysis includes seeking out and isolating underground water breaks.

"Is any of the existing pipe usable?" Robbies first asks.

Likewise, David Dynan, head of American Lawn Sprinkler in Norwood, Mass., looks to signs of stress in plant material, lowered or inadequate water pressure or sprinkler heads which simply and obviously are working.

Plug it up early

Sometimes, Dynan says, small underground leaks build up over time, adding up to a major retooling job.

"From an analysis we may have recommendations of specifically what must be replaced," says Dynan.

Weather stations and moisture sensors can be installed where conditions dictate. He has retrofitted the monitoring devices to older, still-serviceable irrigation systems.

"With the price of water so essential, it makes good common sense to use these simple devices," says Dynan.

He says golf course owners at times opt to make repairs piecemeal, blunting and spreading out costs; making upgradings where needed most and the capital improvement budget permits.

Like other irrigation consultants and installers, Dynan notes drought-resistant plantings are more a function of landscape designers.

Dynan also says some golf course work can be done during the season.

"Depending on the upgrading needed, you plan the logistics for major repairs so you obviously don't get in the golfers' way," says Dynan. Fall and early spring are ideal times, but other repairs along the periphery of the playing area may be made during peak season. **LM**

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The bike path near I-90. Maintenance schedules must consider the presence of heavy traffic in the area.

KEEPING RIGHT-OF-WAY MAINTENANCE DOWN

Washington state's I-90 project is designed to require a minimum of landscape maintenance.

by Leslee Jaquette

The seven mile stretch of Interstate 90, recently completed between Bellevue and Seattle, Wash., is touted as the most expensive strip of highway in the country. The landscape treatment alone will cost taxpayers $25 million.

The 200-acre landscape area includes 12 miles of trails, three multi-use lids and seven structures widened to support landscaping. Only one-third complete, the project will use 775,000 cubic yards of soil and nearly one million plants.

To establish and promote thousands of trees, shrubs and groundcover plants, the Department of Transportation landscape team designed each of the 20 projects with practical maintenance in mind. A computer controlled irrigation system in tandem with value engineering and other common sense maintenance decisions should prove the landscape design a success for generations.

"Considering the scope of the entire project, the DOT has done an excellent job," says Rich Osaka, owner of Fuji Industries of Tacoma. "They have used great forethought in creating a variety of aesthetic and functional environments that are maintenance friendly."

Plants establishing

One of the first contractors to work on the I-90 bike path across Mercer Island, Osaka's project is in the second year of plant establishment. It simulates an orchard, using snowberries, Rugosa roses, ivy and flowering pear trees. After the third year of maintenance, as with all the projects, maintenance reverts from the contractor back to either the DOT or the local municipality. Osaka says by the time his contract ends, most of the plants will have filled in to the point that very little weeding or pruning will be necessary.

Local engineers agree with Osaka that the I-90 project has been well conceived and carefully negotiated to the point that there should be few surprises at turn-over time. Director of Maintenance for the City of Mercer Island, Dick Williams, says

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Circle No. 122 on Reader Inquiry Card

he is just starting to look at potential staff increases and equipment needs for next year. For now, he plans to use the city's Ransome's five-gang mower on the additional flat areas, including play fields and parks.

His main concern is that care be taken when it comes time to fertilize the lids. These large cement structures are covered with a thin layer of soil only 18 to 24 inches deep.

Reducing maintenance

Early on, the DOT conducted extensive value engineering studies to develop a plant palette of about 80 different visually attractive and functional species. The palette allows for about a dozen species of evergreen shrubs, deciduous shrubs, large deciduous trees, small to medium deciduous trees, coniferous evergreen trees and groundcovers. Five primary plants were used extensively in each category.

In conjunction with the careful selection of trees and plants, large expanses were planted with a single species. Architect Don Howe says the design calls for acres of ivy. In fact, in one area alone, 620 gallon-size plants were used for underplanting. Each ivy plant cost around $5 and had four 10-inch runners. They were planted three feet on center.

Howe believes the extra cost for bigger plants is worth it. The larger plants insure the roots can get below bark mulch within the three-year establishment period. Erosion control is expeditied and maintenance decreased due to their quick spread.

Cliff Cooper, I-90 engineer on Mercer Island, says tree size was a critical issue from the beginning. Citizens were concerned the DOT would plant six-inch high trees. Since then, the planting of 3½-inch caliper, 18-foot high cedars and maples has obviated most anxieties.

Cost-effective soil mix

The trees and other plants grow in a value-engineered soil composed of 75 percent sand and 25 percent bark plus nutrients. Howe says this soil mix was cost-effective. It was also easier to make mountains of the mix than it was to find enough native soil for the project. Around 130,000 cubic yards of the sand/bark mix was used on the Seattle and Mercer Island lids. An additional 625,000 cubic yards was used elsewhere in the linear park areas, medians and trails.

To insure that the trees and shrubs don't drown in the soil, the projects provide for positive drainage. In an environment that sees months of steady and sometimes heavy rain, it was imperative that each project use lots of conduits and free-draining material. Howe explains that great masses of unsuitable drainage material such as clay had to be excavated and hauled away, substituted by tons of gravel.

Choosing irrigation

One of the most unique aspects of the I-90 landscape design is the irrigation system. According to DOT landscape designer Raymond Willard, the basic purpose of the irrigation system is to establish the plants. Despite that initial goal, and the system's temporary status, it is designed to be activated during droughts.

Willard says that although the plants were selected for their tenacity, the irrigation system has the capability to provide permanent irrigation if needed. This feature enables the DOT or municipalities to irrigate areas with landscaping over the freeway, widened crossings, lids and play fields. Turf areas with only 18 inches of subsoil and structures with up to only six feet of soil for trees will require regular irrigation.

This computer controlled irrigation system is the wonder child of the DOT landscape design. The RainBird Maxi ET program controls the irrigation system as well as monitoring the system for problems. The RainBird software and flow sensors by Data Industrial Manufacturing were selected after extensive comparative research on five major systems.

Willard says RainBird was chosen after the DOT matrixed all the capabilities, costs, company reliability and user-friendly features of all contenders. Three computers will be installed for each of the different government agencies that will eventually take over maintenance of the landscaping: City of Seattle, City of Mercer Island, and the DOT.

All 20 landscape projects require irrigation systems. Willard notes some of the projects involve skirting 30-foot walls and canyon-like sections of highway. Contractors used ductal iron pipe for these areas to carry water up to 80-feet in elevation around barriers. The computer system is partially justified as a safety measure because of its ability to monitor water application and guard against leaks and broken heads in these difficult areas. The RainBird-controlled system's ability to automatically shut-off irrigation could help avoid wall failure or washouts.

The computer program is linked to weather station information. Using the latest weather data, the software automatically adjusts irrigation according to the temperature, rainfall and humidity. Maintenance is also enhanced by its ability to be customized to irrigate specific zones and not others.

The DOT selected three main sprinkler heads to provide continuity throughout the projects: RainBird, Toro and Hunter. In another move to decrease maintenance DOT designers opted for ground-level couplers and thousands of pop-up heads that retract when not in operation. The landscape team also requires metal detector tape be placed above laterals and valve boxes so they can be easily located with a metal detector.

In an additional effort to minimize maintenance, the design calls for 12-inch mowing strips between ground cover and lawn areas. Howe notes the Seattle lid alone uses more than 5700 feet of the cement stripping, to expedite mowing.

Maintenance issues

There are numerous long-term maintenance issues yet to be finalized, says Howe, but as the first contracts approach turn-over, individual management plans will be developed.

General guidelines do exist, however. For example, only licensed pesticide applicators will be approved and each project will be individually evaluated.

Howe says the biggest challenge continues to be dealing with the populace. It is difficult to develop extensive landscaping" that meets both the DOT's needs and the needs of the community.

"Each individual has his own view of what it should look like," says Howe with a shake of the head. "Some see it as a forest, others want a 180-degree view."

The I-90 landscape design will require very little maintenance because of careful planning and progressive systems. Still, considering erosion control is the main justification for planting, Howe admits a certain amazement at the whole project. "With less than two percent of the total highway budget," says Howe, "the landscape effort will enhance the project for decades." **LM**

Leslee Jacuett is a freelance writer based in Edmonds, WA.

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Circle No. 149 on Reader Inquiry Card

QUICKIE-QUIZ

Warm season insect control

ED. NOTE: Answers to all questions can be found in this month's "Warm Season Insect Control Guide."

1. Biological control agents:
- a. require very few host pests for establishment purposes
- b. work best when environmental requirements (moisture, temperature, etc.) are met
- c. will completely eliminate rather than suppress insects

2. "Precision placement" refers to:
- a. the arrangement of insects on a leaf
- b. subsurface application of control products
- c. the patterns in which shrubs are planted to deter colonization

3. Mole crickets are considered primary pests in (multiple answers):
- a. Tennessee
- b. Florida
- c. southern Georgia

4. Chinch bugs and adult billbugs become active by:
- a. mid-March
- b. late May
- c. June
- d. early April

Bluegrass billbug

5. Green June beetle grubs are easily distinguished from other grubs because:
- a. they are green
- b. they resemble billbugs
- c. they crawl on their backs with legs in the air

6. Milky spore for Japanese beetle control may be best accomplished in:
- a. late March
- b. late April
- c. early May

7. Sod webworms overwintered as caterpillars usually pupate in:
- a. April, and moths emerge in May
- b. March, and moths emerge in April
- c. June, and moths emerge in July

8. If the turf feels "squishy" when walked on:
- a. you aerified too much
- b. spittlebug nymphs may be present
- c. beetle grubs are present

9. Wet springs usually mean _____ chinch bug damage in June.
- a. more
- b. less

10. Mole crickets can be effectively controlled in most areas in:
- a. June and July
- b. July and August
- c. May and June

Mole cricket

11. Fall armyworms confine most of their damage to:
- a. bluegrass
- b. perennial ryegrass
- c. tall fescue
- d. bermudagrass

12. Most years, grub treatments are effective through:
- a. June
- b. July
- c. August
- d. September

13. Mole crickets are difficult to control because:
- a. they are hard to see
- b. they burrow deep into turf
- c. they are very mobile
- d. they are mistaken for moles

14. Pre-treatment watering during hot weather:
- a. eliminates the effectiveness of control products
- b. quenches the insects' thirst
- c. moves pests closer to the surface
- d. causes the pests to burrow further down to dry ground

Fire ant

15. In summer, area treatments for fire ants are still effective unless drought conditions exist. Mound treatments are most effective if done:
- a. late or early in the day
- b. in the evening
- c. time of the day is not important

ANSWERS:

1.b; 2.b; 3.b,c; 4.d; 5.c; 6.a; 7.b; 8.b; 9.b; 10.a; 11.d; 12.d; 13.c; 14.c; 15.a

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Circle No. 121 on Reader Inquiry Card

Mulching keeps plants healthy and moist

Mulching beneath ornamental plants is an established practice in today's landscapes.

It is even used as an ornamental feature by itself without the addition of plants. In that situation, there are few (if any) guidelines necessary for applying and using mulch. But there are specific rules to follow when mulching plants to maximize their growth and health.

Mulching around ornamental plants involves covering a portion or all of the rootzone with shredded hardwood bark, bark nuggets, wood chips or other materials. Select a material that features:

- consistent color and texture;
- compaction resistance;
- wind and water erosion resistance;
- fire resistance;
- slow rate of decomposition; and
- ability to reduce weed growth.

The mulch that you select has to do more than just cover up the bare soil.

From the plant's standpoint, mulch must allow for an exchange of gases (oxygen into the soil, carbon dioxide out of the soil) and the penetration and the slow evaporation of water. If mulch slows or stops these processes, plants will decline and eventually die, according to David Whitworth, horticulturist at the Davey Human and Technical Resources Center.

The most important benefit of mulching plants is the conservation of soil moisture. When mulching is done correctly, soil water evaporates slowly and provides plants with a consistent source of water. Over a few years, as organic mulches decompose, the underlying soil's ability to hold water may be improved. In most cases, mulched trees and shrubs survived the drought of 1988 better than those that did not have mulch.

Mulch can actually improve water infiltration into the soil. Raindrops falling on bare soil not only cause erosion but also cause soil surface compaction. Mulch reduces or eliminates erosion and cushions the impact of raindrops. Water can then penetrate to a greater depth, as well as can plant roots.

Two common mistakes in using mulch are applying it too deeply and mounding it up against tree and shrub trunks. Most mulches should be only two to four inches deep. Use the low range for heavy, clay soils and the high range for lighter, sandy soils.

New mulch should be applied when existing mulch is nearly decomposed. Most mulches should be two to four inches deep.

Mulch selection

The National Bark & Soil Producers Association has developed an advisory brochure on mulch product selection.

Aimed at helping landscapers decide what products are best-suited for different lawn and garden applications, the "Mulch Selection Guide" contains a reference table rating nine products (pine nuggets, hardwood mulch, etc.) by six characteristics, five use benefits and six typical applications.

Additionally, the guide includes five helpful hints on application depth, bed preparation, excessive mulch build-up, nitrogen depletion and wood content.

Individual copies of the "Mulch Selection Guide" are available free from the NBSPA office, 13542 Union Village Circle, Clifton, VA 22024.

It is not unusual to find landscapes with mulches that are six to eight inches deep or more. Air and water exchange are dramatically reduced and the soil becomes an inhospitable environment for roots. Mulch that buries the base of a trunk encourages the development of decay fungi.

The annual re-application of mulch to a planting bed certainly improves the initial appearance of the landscape, but it can also lead to unattractive, sick plants. Annual mulching causes a build-up that exceeds the maximum recommended depth. One to two inches of mulch applied every two to three years is adequate to maintain the beneficial aspects of the mulch. New mulch should not be applied until the existing mulch is nearly decomposed and has been lightly incorporated into the soil.

To renew the appearance of mulch in the intervening years, consider using one of the new mulch colorant sprays. Simply raking the existing mulch can be a dramatic improvement.

Mulches will not eliminate the headaches of weed competition, but can reduce the density of undesirable grasses and broadleaf weeds. Maximum weed control can be achieved by applying a pre-emergence herbicide and/or landscape fabric (not sheet plastic!) before spreading the mulch.

Mulches are an integral part of landscaping. Use them the wrong way and expensive plants will die. Use them correctly and your plants will reward you with years of beauty. **LM**

Woods makes the grade... the commercial grade, that is.

Since our introduction of the first tractor powered rotary mower in 1947, customers have consistently awarded our equipment top grades for innovation and reliable performance.

Now we've applied our engineering and manufacturing expertise to an expanded line of commercial turf maintenance equipment. From the design stage right through component specification and assembly, these products are in a class by themselves.

mow 'n machines™

Zero turning radius mowers in five tractor sizes with mowing decks from 44" to 72".

Landscape Rakes

Seven rugged model series in 6 ft., 7 ft. and 8 ft. lengths for tractors rated up to 60 hp.

Walk-Behind Mowers

Smooth operating hydrostatic drive mowers with cutting swaths from 36" to 61".

Isn't it time you moved to the head of the commercial grounds maintenance class with Woods professional equipment? For more information contact your Woods dealer or write today to Woods, Dept. LM, Oregon, Illinois 61061.

WOODS®

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Circle No. 153 on Reader Inquiry Card

Fertilizer spreader both maneuverable, flexible

The Classen RS-30 rider spreader from Classen Manufacturing Co. has a 12.5-inch turning radius and fits through a 30-inch gate.

The spreader hopper accepts most fertilizers and comes equipped with a cover to protect contents. The rider has a two-speed transmission with reverse and an 8 hp gasoline engine.

A liquid applicator attachment

will be available later, the company says.

Circle No. 191 on Reader Inquiry Card.

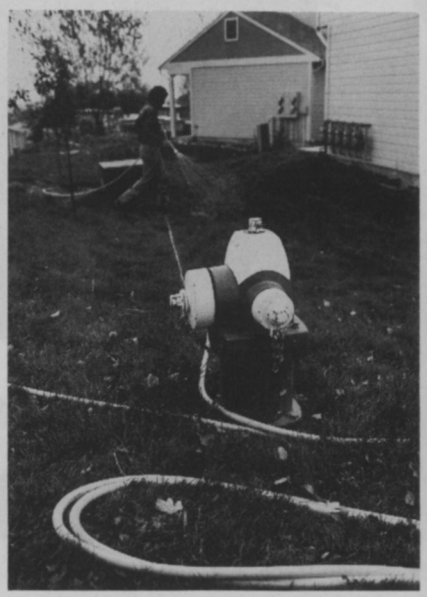
Hoses manufactured with durability in mind

Two new hoses available from the Gates Rubber Co. are kink-resistant and capable of handling insecticides, herbicides, fumigants and fumicides.

Thermo-AG600, for low pressure situations and Thermo-AG800, for high pressure work, are reinforced with polyester cord woven in a locked-braid angle. The lines are also coated with PCV tubing which Gates says gives them stability, lessening a tendency to shorten or lengthen during pressure surges.

Gates says the lines can convey two percent concentrations of Toluene or Xylene and over 60 other water soluble mixtures.

Both are available in ID sizes, stan-

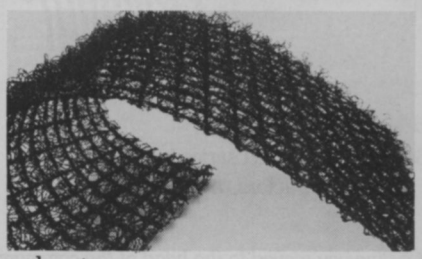


dard 300- and 400-foot lengths and reels lengths to order.

Circle No. 192 on Reader Inquiry Card

Erosion control matting designed for strength

Akzo Industrial Systems now sells Enkamat S; an erosion control matting which combines nylon with PVC



polyester.

The company says Enkamat S is ideal for erosion control projects

3 EASY MINUTES. NO REWORK. GUARANTEED.

You plant a lot of trees in a year. So why mess around with twine, rope, burlap and wooden stakes?

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Give your trees the best fighting chance to survive. And save time and money. Call toll free for the dealer nearest you or for details on DUCKBILL tree support kits. They're the top choice of professional landscapers.

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Name (please print) _____
Title _____ **Phone No. (** _____ **)** _____

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Business Address _____
City _____ **State** _____ **Zip** _____
Do you wish to receive promotional materials? YES ☐ NO ☐

1. BUSINESS & INDUSTRY

My primary business at this location is: (Check only one in either A, B, or C)

A. LANDSCAPE/GROUND CARE AT ONE OF THE FOLLOWING TYPES OF FACILITIES:

0005 ☐ Golf courses
0010 ☐ Sports complexes
0015 ☐ Parks
0020 ☐ Rights-of-way maintenance for highways, railroads & utilities
0025 ☐ Schools, colleges & universities
0030 ☐ Industrial & office parks/plants
0045 ☐ Condominiums/apartments/housing developments/hotels/resorts
0050 ☐ Cemeteries/memorial gardens
0060 ☐ Military installations & prisons
0065 ☐ Airports
0070 ☐ Multiple government municipal facilities
☐ Other type of facility (specify)
_____
_____

B. CONTRACTORS/SERVICE COMPANIES/CONSULTANTS:

0105 ☐ Landscape contractors (Installation & maintenance)
0110 ☐ Lawn care service companies
0112 ☐ Custom chemical applicators
0125 ☐ Landscape architects
0135 ☐ Extension agents/consultants for horticulture
☐ Other contractor or service (specify) _____
_____

C. SUPPLIERS

0205 ☐ Sod growers
0210 ☐ Dealers, distributors
☐ Other supplier (specify) _____
_____
_____

2. WHICH OF THE FOLLOWING BEST DESCRIBES YOUR TITLE? (Check only one)

10 ☐ EXECUTIVE/ADMINISTRATOR—President, owner, partner, director, general manager, chairman of the board, purchasing agent, director of physical plant
20 ☐ MANAGER/SUPERINTENDENT—Landscape/ground manager, superintendent, foreman, supervisor
30 ☐ GOVERNMENT OFFICIAL—Government commissioner, agent, other government official
40 ☐ SPECIALIST—Arborist, forester, architect, consultant, agronomist, pilot, instructor, researcher, horticulturalist, certified specialist
50 ☐ OTHER TITLED AND NON–TITLED PERSONNEL (specify) _____

where high tensile strength is needed. The matting withstands stresses from materials as gunite, gravel and soil.

A high tensile strength is augmented by a three-dimensional grip design.

Akzo says Enkamat matting is the only product of its type on the market.

Circle No. 193 on Reader Inquiry Card

Spray pattern indicator in premeasured packets

Milliken Chemical has developed a concentrated Blazon product in premeasured, easy-to-handle packets.

Milliken says each Blazon packet will color 50 gallons of spray solution. For smaller volume spray solutions, a portion of the packet can be used, and the remainder stored for later use.

Circle No. 194 on Reader Inquiry Card

Features aplenty on compression sprayer

New from D.B. Smith & Co. is a compression sprayer with a lifetime warranty and several features. The Max has a thick high density poly tank, chemically-resistant O rings

and braided hose, a pressure relief valve and two nozzles, including an adjustable brass head and flat fan.

Circle No. 195 on Reader Inquiry Card

Patented drainage system now commercially ready

A waterproof and radon-proof plastic drainage system from Albee Trieber Co. is now on the market.

The piping system features waffle-type plastic core as a baffle plate for water collection.

Surrounding the core is a non-woven filter fabric which permits ground water to permeate and collect on the core but prevents adjacent soil from washing through the porous surface.

Styrofoam panels abut the concrete foundation.

Uses include man-made lakes, golf courses, leachfields, airport runways, commercial and residential foundations and retainer walls.

Circle No. 196 on Reader Inquiry Card

Compact hydrograsser sports fine features

A hydrograsser model from Reinco,

NO MATTER HOW YOU CUT IT.

You can depend on Champion® spark plugs to run longer and better.

CHAMPION

Made for all makes of domestic & imported engines.

Circle No. 105 on Reader Inquiry Card

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Nebraska

LANDSCAPE MANAGEMENT is written for golf course and landscape professionals, while LAWN CARE INDUSTRY satisfies the information needs of chemical lawn care professionals. Together, they provide total show and industry news coverage.

You could call their editorial and marketing teams "roadies," because they spend 50% of their time traveling to shows, tracking stories and getting candid perspectives from suppliers. Listed here is just a portion of the shows they'll be attending this year. Frankly, it's the only way to stay on top of late-breaking news and keep both books fresh and on the cutting edge of their market segments. This dedication makes them the authoritative voices on industry problems and opportunities readers need to be aware of...and explains why their competitors look like warm-up acts.

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When your product message appears in either LANDSCAPE MANAGEMENT or LAWN CARE INDUSTRY, your ad plays exclusively to loyal fans and earns rave reviews that will improve your bottom line. Call your LANDSCAPE MANAGEMENT or LAWN CARE INDUSTRY representative today to reserve space in the superstars of the industry.

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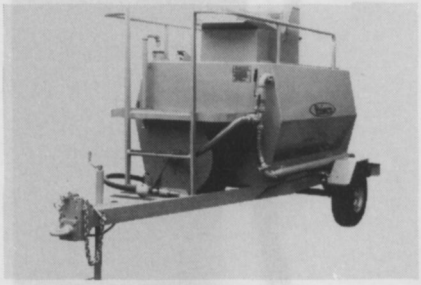
Inc. is equipped with a 500-gallon working capacity tank, 125-foot spray range and "tilt-load" fiber mulch grinder. Reinco says the new model is the only one in the industry with the mulch grinding feature.

One tankload covers about 5,000 to 8,000 square feet. Other finer points include Reinco's dual agitation and "hydro-jet" agitation.



Circle No. 197 on Reader Inquiry Card

New lightweight trimmers are super quick starters

From Husqvarna Forest and Garden Co. comes 10 new lightweight trimmers equipped with a one-button injection starting system.

The company says the system eliminates choking and half throttling by pushing a button. The trimmers are equipped with pull starts.

Five models are powered by a 1.6 cubic inch engine, five by a 1.9 cubic inch engine. Weights range from 11.5 pounds to 13.4 pounds.

Circle No. 198 on Reader Inquiry Card

Summer weed herbicide has winter uses, too

American Cyanamid Co. announces its Image herbicide is now effective in controlling winter weeds such as henbit, lawn burweed, buttercup, chickweed, hairy bittercress, parsley-piert and wild onion and garlic.

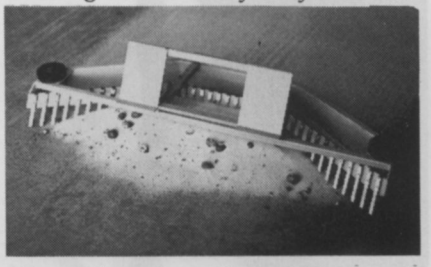
Image, in use as a summer weed controller, may be applied after the first frost for effective winter weed control. The herbicide also assists in control of *poa annua*, cudweed and dandelion. The firm said Image also provides residual control of winter annuals until spring.

In summer use, the herbicide can control weed populations in turfgrasses.

Circle No. 199 on Reader Inquiry Card

Grading tool levels, shapes and spreads soil

The Insty Grader is a solid leveling and finishing tool of heavy duty construc-



tions with replaceable hardened steel edges.

Countryside Sales Co., Jordan, Minn. says the tool serrates and sifts the top soil, leaving the surface soft and ready for sodding or seeding.

Levels and spreads piles of top soil

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Field Proven Olathe Equipment For The Landscape Professional!

Reliable, durable and innovative Olathe Brush & Wood Debris Chippers/Tub Grinders have been helping turf and grounds maintenance programs control brush and limbs for over 18 years!

Model 12 Brush Chipper

PTO-powered chipper reduces brush and limbs to a mulch sized chip. Features 7" diameter brush and limb capacity. Trailer mounted or 3-pt. hitch available. Folds into a convenient size for ease of transport and storage in a 5 ft. square area.

Model 182 Brush Chipper

Trailer mounted hydraulic feed disc chipper reduces limbs and brush up to 6" diameter. 20 and 24 hp gas or 21.5 hp diesel engines available. 12"x20" infeed opening with 360° discharge chute and 170° chipper head rotation.

Model 818 Tub Grinder

Compact and portable with a 78" wide x 32" deep rotating tub. Load directly into tub or pre-size larger wood materials with the attached hydraulic feed disc chipper. Reduce branches, limbs and brush up to 6" diameter.

Model 12

Model 182

Model 818

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Circle No. 137 on Reader Inquiry Card

IF THIS YEAR'S PROBLEMS LOOK LIKE THIS:

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Our SCU products are carefully selected to be uniform in size, to flow freely and evenly, and provide the best possible nutrient distribution. Plus they're supported by a full line of granular control products for straight application.

Every standard formulation in the Lebanon Pro SCU line is stocked and ready, assuring you of product availability—whatever the season. And with our nationwide distribution network you can get the products you need, when you need them most.

For more information on Lebanon Pro SCU fertilizers, contact your local Lebanon sales representative, Lebanon distributor or call 1-800-233-0628.

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The Season-To-Season SCU

Lebanon
TURF PRODUCTS

Circle No. 126 on Reader Inquiry Card

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without the need to change to other implements.

The company says the Insty Grader shapes swales and berms, eliminates almost all handwork.

Mounts are available for skid steers or 3-point tractors, in 60-, 76- and 94- inch widths.

Circle No. 200 on Reader Inquiry Card

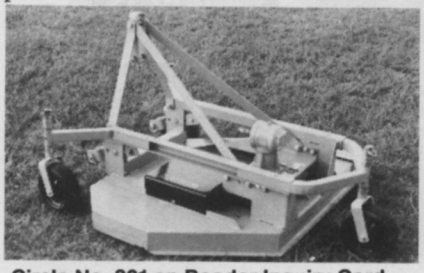
Two new rotary cutter systems on the market

Land Pride announces two new heavy duty rotary cutter systems have been added to its line along with a 48-inch grooming mower.

The 120-inch rotary cutters from the 35 Series Cutters are available in a pull type model and three-point model with a floating top hitch and lower clevises.

Both models provide a 10-foot cutting width and adjustable cutting height from 2 to 14 inches. Each is equipped with 15-inch laminated tires and the pull model may be equipped with 15- or 21-inch ag rims.

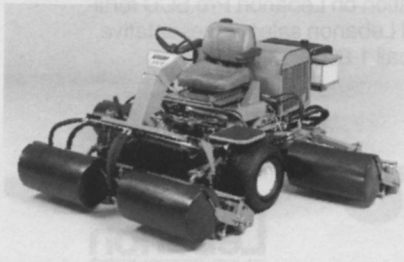
The new mid-sized mower is more compact than previous Land Pride models and comes in three- and four-wheel designs. Cutting adjustments range from 1 5 ½ inches in half inch increments. The line is rated for 30 engine horsepower and 26 PTO horsepower tractors.



Circle No. 201 on Reader Inquiry Card

Power steering among many mower improvements

Power steering, tilt steering wheel and three-wheel positraction have been added to Lesco, Inc.'s 500D Fairway Mower.



The latest 500D Fairway Mower also features an improved wing-arm design. The mower is powered by a 21 ½ hp diesel engine.

Circle No. 202 on Reader Inquiry Card

New fertilizer effective on surface, sub-surface pests

The Andersons Management Corp. recently introduced Tee Time Fertilizer 30-3-8, designed to control both surface-feeding and subsurface insects.

Tee Time Fertilizer, containing the company's insecticide Sevin, may be applied with broadcast spreaders and may be used where other chemical controls are restricted because of environmental concerns.

The product also leaves no odor, according to the company.

Circle No. 203 on Reader Inquiry Card

Power steering introduced on two compact tractors

Hydrostatic power steering options are available on two Ford New Holland compact diesel tractors for 1991.

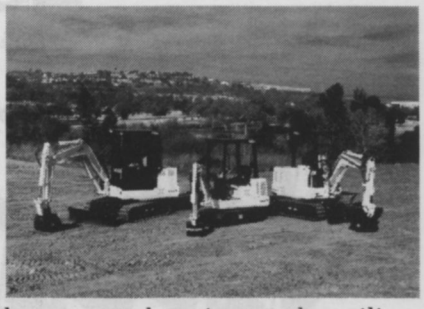
Both the Model 1120 at 12.5 PTO hp and the 1220 at 14.5 hp are also available with 9-speed manual transmissions or hydrostatic drive.

According to Ford New Holland, the power steering option works well with the line's implements and attachments which include a front-end loader, rear tiller, plows, harrows, cultivator and other labor saving devices.

Circle No. 204 on Reader Inquiry Card

Three new excavators dig deep, dump high

The Melroe Co. offers a new line of Bobcat excavators, all diesel powered and featuring full-open hoods, rubber-mounted engines and auxiliary hydraulics.



The largest model 231 measures 94 inches tall and 61 inches wide with a maximum digging depth of 121 inches and dumping height of 115 inches. Model 225 is 94 inches tall and 55 inches wide. It has a maximum digging depth of 80 inches and dumping height of 84.6 inches. Model 220, the smallest in the line, measures 85 inches tall and 39 inches wide. Its digging depth maximum is 80 inches and dumping height ceiling is 84.6 inches.

Circle No. 205 on Reader Inquiry Card

Backhoe adapts to popular tractor lines

Du-Al's model 1015 backhoe has been designed to adapt to both the Ford New Holland L450 and 550 series and the John Deere 570, 575 and 675 skid steer loaders.

The firm says the unit may be mounted or dismounted in minutes. The 7 ½-inch backhoe is equipped with a multi-function valve. Models come in 10-, 12-, 16- and 24-inch bucket widths and convert to 13-point hitches for compact trailers.

Circle No. 206 on Reader Inquiry Card.

Stance cart promises durability, flexibility

From Maruyama U.S. Inc. comes a durable wide stance cart for its backpack sprayer.

Equipped with flotation tires, the

cart may also be ordered with an optional 64-foot hose for the operator to spray in one central area.

Maruyama's Model MSO55D backpack sprayer comes with a duplex piston pump and a heavy duty gearbox. The powerplant is a Kawasaki TF22 engine. Output is 1.1 gallons per minute. The system may be purchased together or separately.

Circle No. 207 on Reader Inquiry Card

Improvements many in new golf car fleet

The G9 Fleet Master is the latest in Yamaha's line of golf cars. The G9's features include a heavy-guage, steel-

reinforced bumper, part of an advanced wrap-around bumper system to extend car longevity.

The Fleet Master features a lonlife rubber molding cowl protector which resists scuffing from golf shoe spikes.

The electric-powered G9-E features a 2.97 hp motor for smooth acceleration and a six-stage (five speed) controller that eliminates abrupt starts.

The gas-powered G9-A is equipped with a spirited overhead valve 4-stroke engine, a three-stage air filter that seals out dirt, and a transistor-controlled ingnition that due to its solid-state design, eliminates the need for timing adjustments.

Circle No. 208 on Reader Inquiry Card

Battery tester handy around the fleet

The Performance Universal 12-Volt Battery Tester determines the con-

dition of lead acid batteries including maintenance-free types such as sealed, recombination and gel cells used in golf carts. Regular testing enables the user to log changes in battery condition.

Pin jacks on the tester accommodate an auxiliary volt meter which allows precise measurements during test.

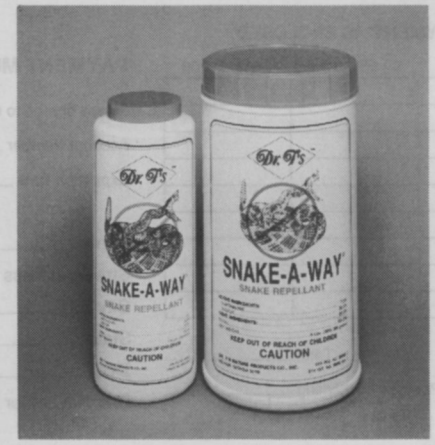
Circle No. 209 on Reader Inquiry Card

Repellent drives away a variety of snakes

Dr. T's Snake-A-Way snake repellent is a recently introduced EPA-approved product that the manufacturer, Dr. T's Nature Products Co., Pelham, Ga., recommends for repelling a variety of snakes, including rattlesnakes.

The label for Snake-A-Way stipulates that the product may be used to repel snakes from areas around homes, cabins, trailers, garages, utility houses, barns, woodpiles, sand piles, trash cans, flower beds, and the periphery of gardens.

The label says the product is especially effective in repelling rattlesnakes, but may be less effective



against cottonmouth moccasins.

The product is applied in four- to five-inch bands to repel smaller snakes, and eight-to 12-inch bands for larger snakes.

Circle No. 210 on Reader Inquiry Card

Catalog features numerous landscape products

A new, 32-page catalog from Garon Products offers a full line of indoor and outdoor maintenance products.

Included in the Garon lines are weed killers, instant concrete and pavement repair products, anti-skid coatings, roof coatings, sealants, cleaners, wildflower seeds and electronic products.

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Circle No. 211 on Reader Inquiry Card

Seat support enhances Rider mower comfort

From Freudenburg-NOK Seals and Molded Products Group comes a urethane seat support designed to improve shock absorption for rider mowers.

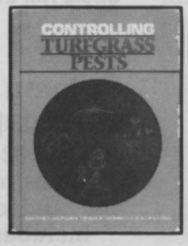
The support is made of a microcellular urethane which the company says is abrasion and tear resistant, has a high tensile strength and resists mosts chemicals.

The seat support has been installed on 1990 Snapper six-speed lawn tractors.

Circle No. 212 on Reader Inquiry Card

BOOKSTORE

375 - RESIDENTIAL LANDSCAPES
by Gregory M. Pierceall
An excellent reference for individuals involved in the design and development of plantings and constructed features for residential sites. Illustrations and actual residential case study examples are used to communicate graphic, planning and design concepts which are the focus of this text. **$55.95**



220 - CONTROLLING TURFGRASS PESTS
by Shurtleff, Fermanian, Randell
New comprehensive guide provides the most up-to-date information available on the identification, biology, control and management of every type of turfgrass pest. **$48.95**

235 - LAWN CARE: A HANDBOOK FOR PROFESSIONALS
by H. Decker, J. Decker
Written by turfgrass professionals, this handy guide will be invaluable for playing field managers, golf course managers, or any lawn care practitioner. Covers all aspects of turfgrass management. **$48.95**

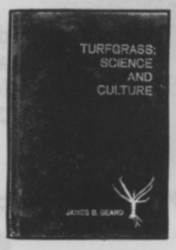
640 - TURF IRRIGATION MANUAL
by James Watkins
A guidebook for engineers, architects, designers and contractors. Keeps pace with the latest developments in turf and landscape irrigation. Specific chapters devoted to rotary sprinkler design systems. Golf course design systems and expanded engineering and reference material. **$29.90**

615 - TURF MANAGEMENT FOR GOLF COURSES
by James Beard
Written by an eminent turfgrass researcher, this USGA sponsored text is an ideal reference and "how to" guide. Details all phases of golf course design and construction, turf management, course administration, irrigation, equipment and disease and pest control. Fully illustrated. **$74.00**

760 - TREE MAINTENANCE
by Pascal Pirone
The sixth edition of this guide for anyone involved in the care and treatment of trees. Special sections on tree abnormalities, diagnosing tree troubles, non-parasitic injuries and assessing the suitability of different trees. **$49.95**

620 - TURF MANAGEMENT HANDBOOK
by Howard Sprague
Practical guide to turf care under both healthy and poor turf conditions. Chapters cover turf in cooler and warmer regions, fertilizer use, regular turf care, weed and disease control and special turf problems. Useful seasonal schedules for management of turf areas. **$26.60**

225 - TURFGRASS MANAGEMENT REVISED
by A.J. Turgeon
Covers the latest developments in turfgrass science and technology. Heavily illustrated with dozens of new drawings. Provides specific recommendations for applying the newest pesticides, fertilizers and other materials to combat turfgrass problems. **$54.95**



630 - TURFGRASS: SCIENCE AND CULTURE
by James Beard
Comprehensive basic text and reference source used in many leading university turf programs. Includes findings of current research compiled from more than 12,000 sources. **$54.95**

110 - TURF MANAGERS' HANDBOOK-Second Edition
by Daniel and Freeborg
ENTIRELY UPDATED. A practical guide for the turf practitioner. Chapters on grasses, growth regulators and diseases have had extensive modification. Innovations resulting from research and practice have been added to reflect the current techniques available for turf managers. **$32.95**

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Teufel Nursery, Inc., an industry leader with 100 years experience in the NW, seeks individuals with proven managerial skills for the following positions: L/S Construction Dept. Manager (Seattle, WA Area). Req. 5-10 years experience w/large ($100,000+) projects; ability to execute complex assignments; effective communication skills; ability to hire/schedule/develop 50+ staff; PC literate; & hort. knowledge. This is not an entry level position. Sr. Estimator (Portland, OR). Requires 3+ years estimating experience in large ($100,000+) projects; PC literacy; ability to manage multiple priorities; able to demonstrate organizational skills resulting in accurate & effective completion of projects; & capable of immediate production w/ min. training in our procedures. Not an entry level position. Compensation package includes medical & flexible benefit plan. All responses held in confidence. EOE M/F/H/V. Send resume to: Personnel Director, Teufel Nursery, Inc., 12345 NW Barnes Road, Portland, OR 97229. (Fax 503-644-2906). 4/91

Our continuing growth requires us to find qualified personnel for the following new positions: **ESTIMATOR:** 5-7 years minimum experience with emphasis in commercial estimating. Must have experience in the buy-out of plants, hard goods and sub-contracts. **PROJECT MANAGER:** Must have the ability to coordinate and manage multiple projects simultaneously. You will be responsible for communicating with major clients, management and field supervisors. Administrative skills with attention to follow-up and detail is necessary. If you are the type of individual that thrives on responsibility and can operate with little direction, we would like to hear from you. Please submit a resume with a cover letter and salary history to: **TORRE & BRUGLIO, INC.,** 20401 Hall Road, Mt. Clemens, MI 48044. Attn: President. 4/91

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$22 ON 2 1/2'S!

Monsanto has lowered the price of Roundup® herbicide by $22 on the 2 1/2 gallon container size!

The price is even lower in 30's. Now you'll find even *more* value in Roundup and *more* places to use it *more* often.

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BUCKET TRUCK: Hi Ranger 65', 57', 50'. Skyworkers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers. Bean 55 gal. sprayers. Pete Mainka Enterprises, 633 Cecilia Drive, Pewaukee, WI 53072. 414-691-4306. TF

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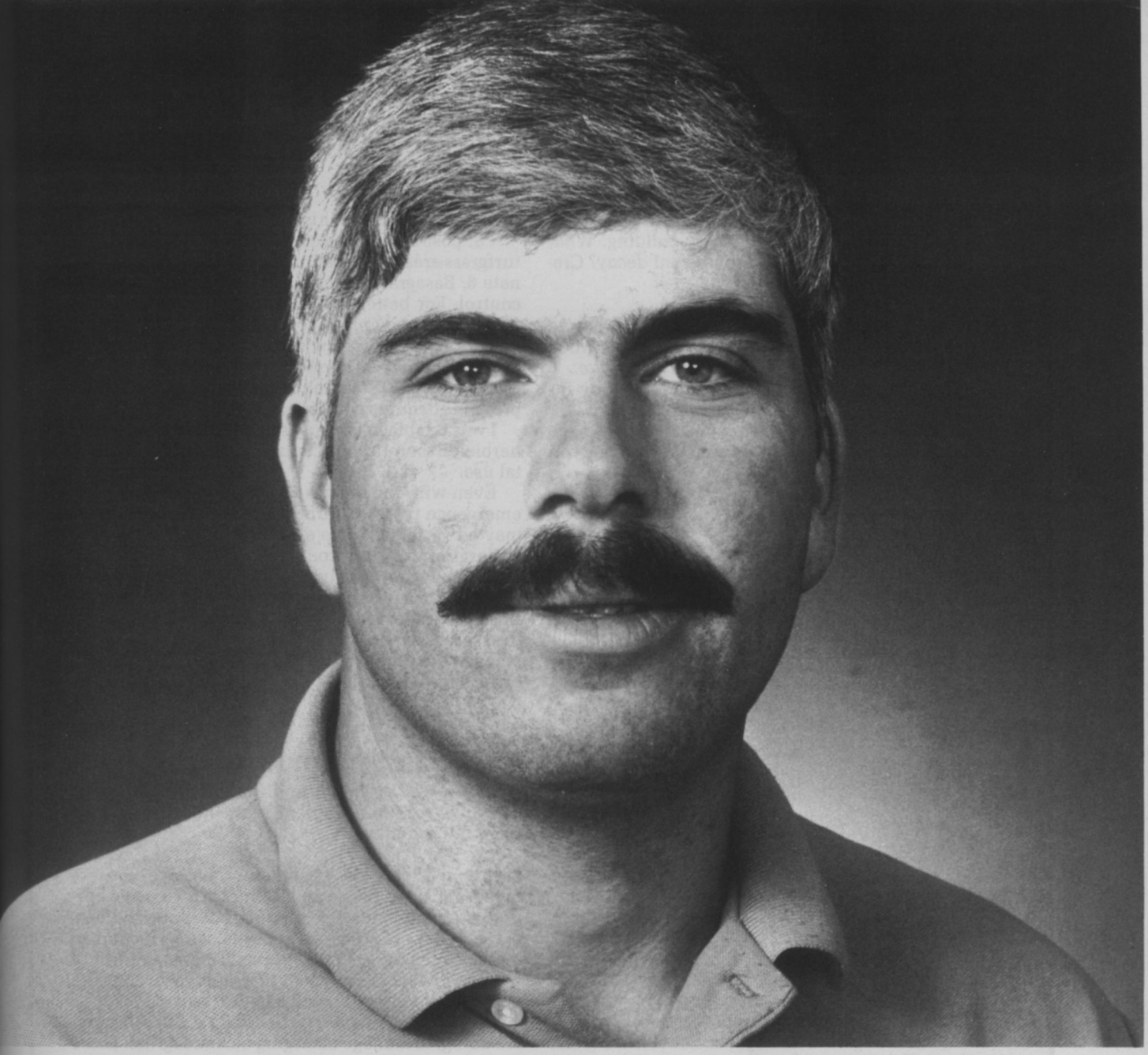

"Springtime in the Atlanta area brings many turfgrass problems. The most serious of all to our company is Spring dead spot (winter kill) on zoysiagrass. Diagnosis and timely treatment is crucial in the rejuvenation process of this slow growing plant.

Last spring we encountered this problem and decided to give ROOTS™ a try. The combination of a soluble fertilizer, fungicide and ROOTS at recommended label rates gave us quick results. By midseason the areas treated were filled in and not noticeable.

ROOTS now plays a vital role in treating spring dead spot on all of our warm season turfgrasses. We are considering using ROOTS in late spring to ensure good root structure for the upcoming hot months."

Matthew Sprague
Turfgrass Manager
Environmental Design Group Inc.
Atlanta, Georgia

roots inc.

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Circle No. 146 on Reader Inquiry Card

Please call us toll-free at 1-800-342-6173 for additional information.

PROBLEM MANAGEMENT

Preventing oak decay

Problem: *We have a client who wants to use oak wood as corner support posts for a utility building. What can be used to treat the wood to prevent decay? Creosote? Borax? (North Carolina)*

Solution: Treating the wood's surface with Creosote or Borax will last only a few years. Ideally, the wood needs to be pressure treated with a preservative.

Improperly treated wood can be attacked by insects and may affect the timber quality.

Contact the lumber companies nearby to see whether they would be interested in helping you treat the wood.

Preventing sap sucker injury

Problem: *What can we do to prevent injury from sap suckers on birch trees? (Michigan)*

Yellow-bellied Sapsucker

Solution: Sap suckers make feeding injury on many plants such as birch and wild cherries. These birds generally make small holes in search of insects and/or sap from the trees. I have seen a number of trees showing sap sucker feeding holes on trunks. In some cases, the whole trunk is covered with holes. However, there was no observable effect on the crown. Perhaps the problem may be aesthetic rather than of economic importance.

If the problem is really objectionable, your best approach is to distract birds from feeding on trunks. Consider treating trees for any insects such as borers. Mechanical devices such as aluminum foil wrapping or tying a pie pan to the trunk may also help distract birds from attraction to susceptible trees.

Ropel, a chemical repellant, has label registration for bird problems. Test it on on a very small area first. Read and follow label specifications for best results.

Pre-emergence nutsedge control

Problem: *Are there any pre-emergence herbicides available that are labeled for the control of nutsedge? (Ohio)*

Solution: A correct answer to this question requires a few additional questions. Are you interested in managing nutsedge on turfgrass areas or in the landscape? Also, are you out to destroy yellow or purple nutsedge?

In your area, you're probably dealing with yellow nutsedge. For pre-emergence yellow nutsedge control in turfgrass there aren't too many choices. Pennant herbicide from Ciba-Geigy has a label recommendation for this use.

For post-emergence control of yellow nutsedge in turfgrass areas, application of products such as Daconate 6, Basagran or Image should provide adequate control. For better results apply the product when the plants are young.

For pre-emergence control of yellow nutsedge in the landscape area, application of herbicides such as Casoron, Dual, Pennant, Eptam and Lasso should provide adequate control.

I was unable to find any selective post-emergence herbicide for nutsedge control labelled for ornamental use.

Even with the application of these pre- and post-emergence types of herbicide, the nutsedge control may be variable. Some of this problem is related to underground bulbs produced from the parent plant which may not receive sufficient herbicide. As a result, new plants may emerge the following year. In this case, repeat treatments may be needed during the season. It may take several years of treatments to manage the problem. Read and follow label specifications for best results.

Eliminating bermudagrass

Problem: *We use fabric and Roundup to get rid of bermudagrass, and it still gives me fits. How do I get rid of it? (Kentucky)*

Solution: From your statement, I believe you are using landscape fabric and Roundup to manage bermudagrass in landscape plantings. Reports indicate that landscape fabrics are not satisfactory in managing bermudagrass. You can expect some control of weeds. However, any weeds that emerge through the fabric need to be managed by other means.

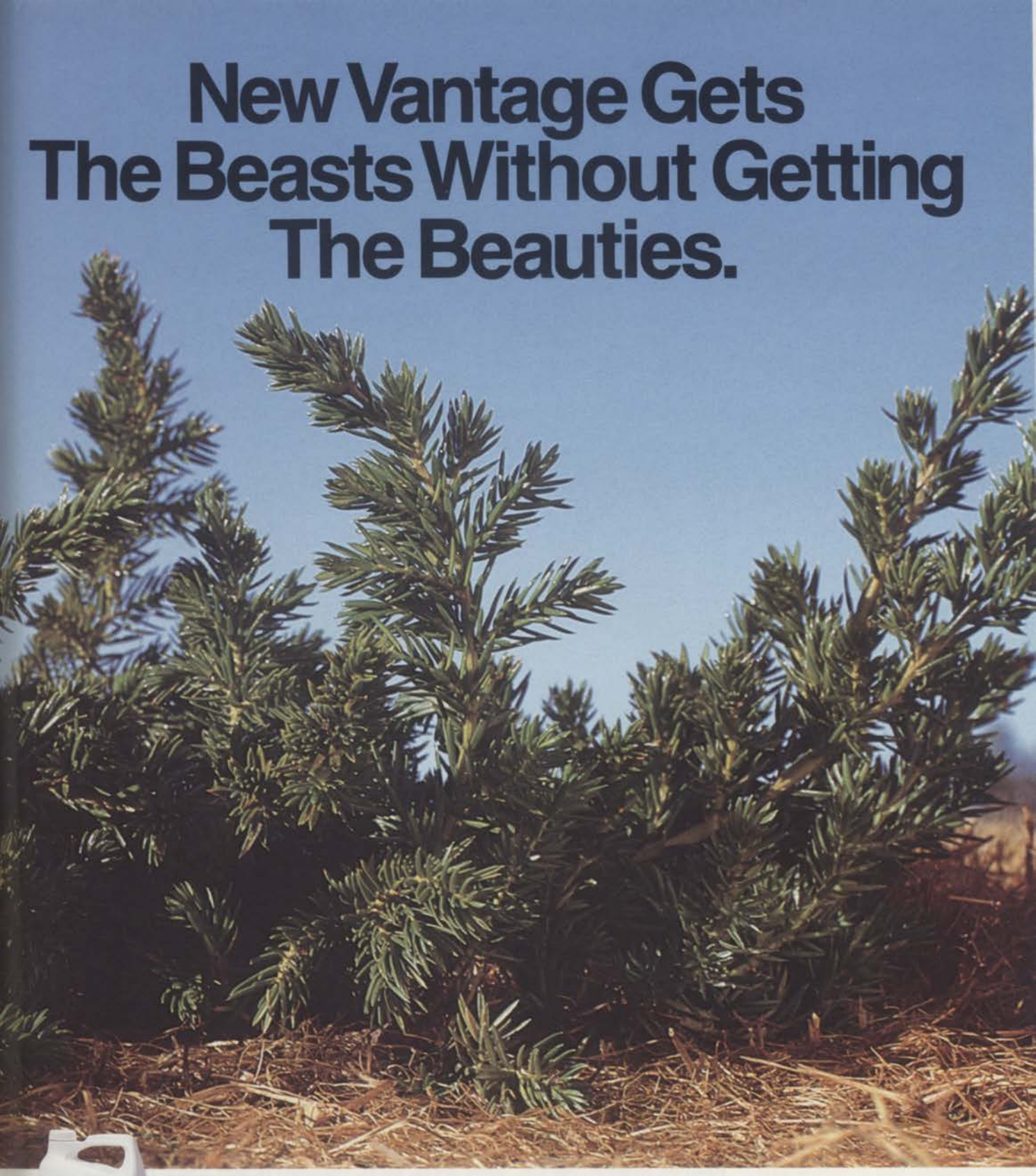
One approach would be to use Roundup, like you are doing, to manage emerging bermudagrass. Since Roundup will kill only the emerged plants, any plants which develop from seeds or rhizomes in the future should be managed with repeat applications. Make sure that Roundup doesn't get on other nearby non-target desirable plants.

Another approach is to use a herbicide such as Post, which is labeled for use in managing bermudagrass. Different rates are recommended based on the stage of development of bermudagrass. Therefore, read and follow label specifications for better results.

Balakrishna Rao is Manager of Technical Resources for the Davey Tree Co., Kent, Ohio.

Questions should be mailed to Problem Management, LANDSCAPE MANAGEMENT, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2-3 months for an answer to appear in the magazine.

New Vantage Gets The Beasts Without Getting The Beauties.



Your grass problem doesn't have to be a frightening story. Because new Vantage™ herbicide selectively controls grass even among your most fragile ornamentals.

You can apply Vantage over the top during almost any stage of your ornamental growth, eliminating the need for costly and time-consuming hand weeding. And with Vantage, there's no worry of leaching.

Use Vantage on your ornamentals, and you'll see how it'll bring your grass problem to a happy ending. If you have any questions, please call us at 1-800-878-8060.

BASF

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